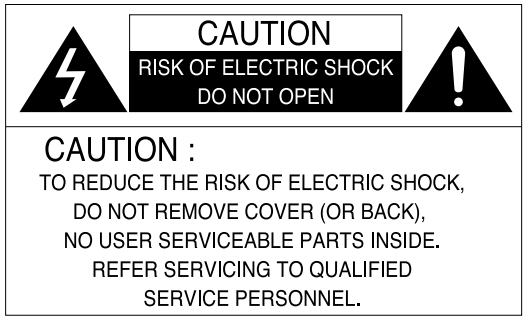
12X SPEED DOME CAMERA

SCP-2120 User Guide

Before installing and operating the camera, please read this user's manual carefully.

English



The lightning flash with an arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INFORMATION - This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING
- CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE MANUFACTURER COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.
- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

CAUTION : To prevent electric shock and risk of fire hazards:
- The installation for this apparatus should be by a qualified service person and should conform to all local codes.
- Do NOT use power sources other than Class 2 power source.

This installation should be made by a qualified service person and should conform to all local codes.

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Features

A/F 12X Optical Zoom

The built-in 12X optical zoom lens with auto-focus is combined with a 16x digital zoom, providing a maximum of 192x zoom.

Versatile protocols and coaxial communication

RS-485, Coaxial communication methods are supported.
- RS-485 (10 protocols) : Samsung Techwin, Pelco (D / P), Samsung Electronics, Panasonic, Honeywell, AD, Vicon, GE, BOCSH
- Coaxial Communications: Pelco Coaxitron (automatic detection)

Wide Range Auto Security Functions

- Multiple Preset Function Saving : Up to 13 camera image properities can be saved individually to provide high quality pictures.
- Image Holding : When moving between presets in Group and Tour functions, using this Preset Freeze function holds the image status and helps reduce visual fatigue.
- PTZ Trace : Patterns operated with the joystick can be saved and replayed by users.
- Swing : Using the Swing function commands the camera to move between 2 selected locations, monitoring the route.
- Group Search : Maximum 255 Preset positions are toured in order.
- Tour Search : Maximum 6 Group Search functions are toured in order.

Digital Flip

The Digital Flip function is useful to monitor moving objects or people passing directly under the camera. When an object or a person passes directly under the camera, its tilt motor follows the object or person over 100 degrees to the other side of the tilt area without panning. The screen inversion starts to occur at 100 degrees or higher is digitally adjusted.

Smart P/T

The Smart P/T function automatically adjusts the control speed of the Pan and Tilt functions according to the current zoom ratio. It is useful to adjust the functions manually for detailed controls when monitoring at high zoom ratios.

Day & Night

With its daytime & nighttime switch and Sens-Up functions based on the ICR (Infrared Cut filter Removal) method, the camera provides high quality pictures regardless of whether it is day or night.
* Sens-Up increases the CCD sensitivity by electrically extending the camera's exposure time.
* Day & Night enables you to select between color and B/W modes depending on the lighting conditions.

OSD (On Screen Display)

The camera IDs, camera preset numbers, preset names, area names, and camera operation status are displayed on the monitor, allowing set up of various camera functions through the OSD menu screen.

Preset Position Saving and Loading

Up to 255 preset positions can be set. Using this function saves and brings up the camera feed of a selected monitoring location.

SSDR (Samsung Super Dynamic Range)

For images with high contrast between bright and dark Areas from difficult lighting conditions such as backlighting, this camera selectively illuminates darker Areas while retaining the same light level for brighter Areas to even out the overall brightness.

Area Masking

If a monitoring location includes a highly private area, the area can be selectively masked on the screen.

eco
RoHS compliant

Samsung Techwin cares for the environment at all product manufacturing stages to preserve the environment, and is taking a number of steps to provide customers with more environment-friendly products. The Eco mark represents Samsung Techwin's will to create environment-friendly products, and indicates that the product satisfies the EU RoHS Directive.

Warnings & Cautions

This information is provided to ensure your safety and to prevent any losses, financial or otherwise. Please read it carefully and use the product accordingly.

* For product inquiries, please contact the retail shop where you bought the camera. The use of equipment such as an aerial ladder while providing after-sales service shall be at your expense.
* Unplug the power plug during a thunder storm to prevent fire and damage to the product.
* This product is support equipment for a security system. Therefore, we can't compensate for material losses and/or personal injuries by robbery, fire, natural disaster, or anything of the sort.

Warning/Caution/Special Mark Messages

	Ignoring this information may result in material loss and/or serious personal injuries, including death.		Ignoring this information may result in material loss and/or slight injuries.
	Indicates "Prohibited".		Indicates "No Disassembly".

Correct Disposal of This Product
(Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.
This product should not be mixed with other commercial wastes for disposal.

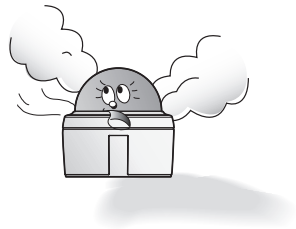
Warnings & Cautions

⚠ Warnings

Do not install on your own.

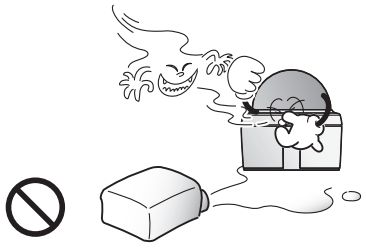
This installation should be made by a qualified service person. Installing this product on your own may result in fire or electric shock. For the installation service, contact the retail shop where you bought the product.

Stop using the camera if smoke or abnormal heat is detected.



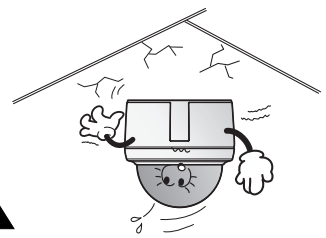
May cause fire.

Do not install in high humidity or in a place that may be exposed to oil or gas.



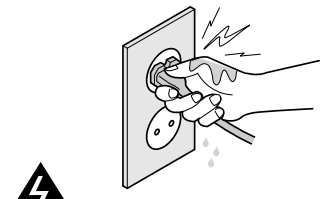
May cause product malfunctions, electric shocks, and fire.

Do not install on an unsubstantial wall that may be subject to vibrations.



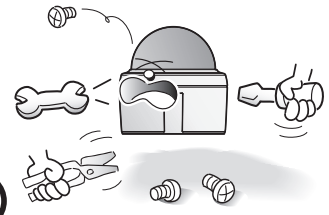
May cause the product to fall.

Do not handle the power plug with wet hands.



May cause electric shock.

Do not disassemble the camera or insert foreign subjects.



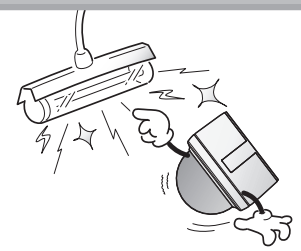
May cause fire and damage to the product.

⚠ Cautions

Do not install under extreme temperature conditions.

Only use in the temperature range of between -10°C and +50°C to prevent low graphics quality and product malfunction. When using in high temperature conditions, provide good ventilation.

Do not install under unstable lighting conditions.

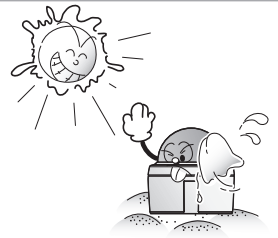


Severe lighting changes or flickering may hinder normal camera operation.

Do not drop the camera or subject it to physical shock.

May cause product malfunctions.

Never keep the camera facing direct sunlight or any other strong lights.



May cause critical damage to the CCD.

Avoid touching the camera lens.

The lens is the most important component of the camera. Be careful not to smear it with fingerprints.

Do not install in a place that may be exposed to rain, water, or radioactivity.

This product is designed to be used indoors. Outdoor use may allow water to enter the product and cause malfunctions.

Warnings & Cautions

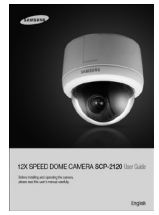
Detailed Warnings and Cautions

- Avoid operating the camera for long durations under high temperatures and in high humidity. Excessive heat can shorten the lifespan of the camera components.
- Do not install or place the camera near any heat sources.
- Subjecting the dome cover to physical shock may damage the camera.
- Do not place the camera facing direct sunlight or other intense light sources. Strong lights such as spotlights can cause distortions—blooming and smear—as well as discolorations on the screen by heating up the color filter of the camera. They also may cause internal reflections of the camera, leading to operational malfunctions.
- Do not drop the camera or subject it to physical shock or vibration; this can cause serious damage to the camera.
- When installing the camera near a power line, make sure to keep at least 1 meter distance from the power line, or earth an additional metal pipe to separate the camera from the power source.
- Install this camera on the ceiling. Installing it on the ground or a unleveled location may cause product malfunctions and shorten its lifespan.
- This product is designed to be used indoors. When installed outdoors, the camera is exposed to environmental stress, such as water and high or low temperatures, which may degrade video quality and/or cause product malfunctions.
- Avoid installing and operating the camera in the following places.
  - · Places whose temperature exceed the camera's recommended range.
  - · Places where drastic temperature changes occur: e.g. Near an air conditioner.
  - · Places that are exposed to steam, oil, and inflammable substances: e.g. Inside a kitchen.
  - · Places that are exposed to radioactivity, X-rays, strong electric waves, and electro-magnetic waves.
  - · Places that are exposed to outdoor air contaminants: e.g. Dust and car exhaust.
  - · Places in high humidity.
  - · Places that are exposed to corrosive gas
- Smeared and dusty dome covers decrease the picture and video quality. Clean the dome cover and camera lens on a regular basis.
- Remove the plastic wrap on the dome cover only after the camera installation is complete.
- This camera is not equipped with a power switch. Plug in the camera only after the installation is complete.

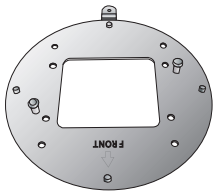
Component Names and Functions

*** Components**

Body

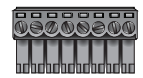


User Guide



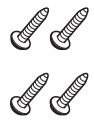
Mount Braket

7Pin Terminal Block

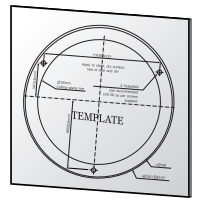


8Pin Terminal Block

BNC Cable



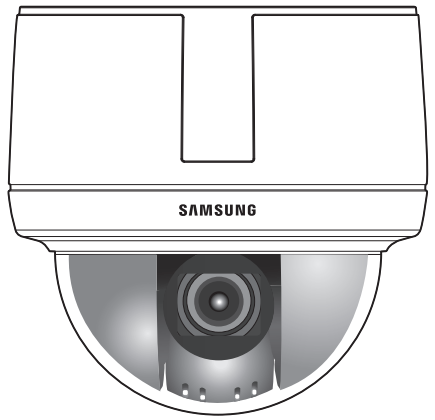
Screw(M4x20, 4ea)



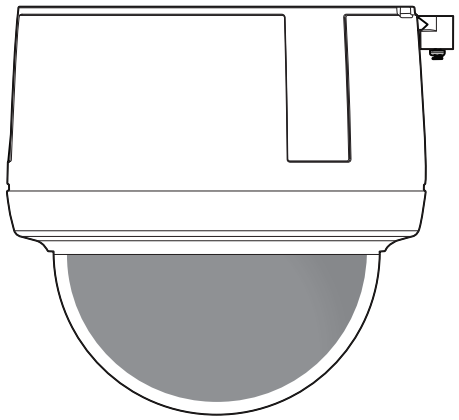
Template

Components and Accessories

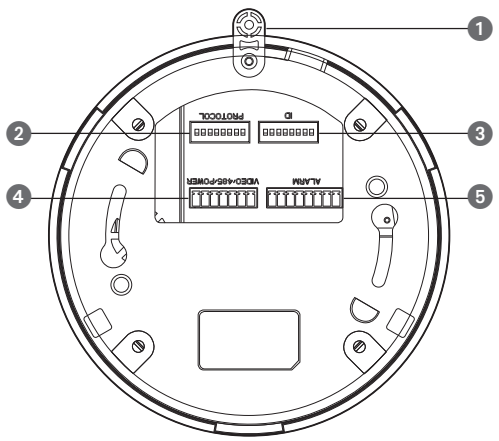
Front



Side



Bottom



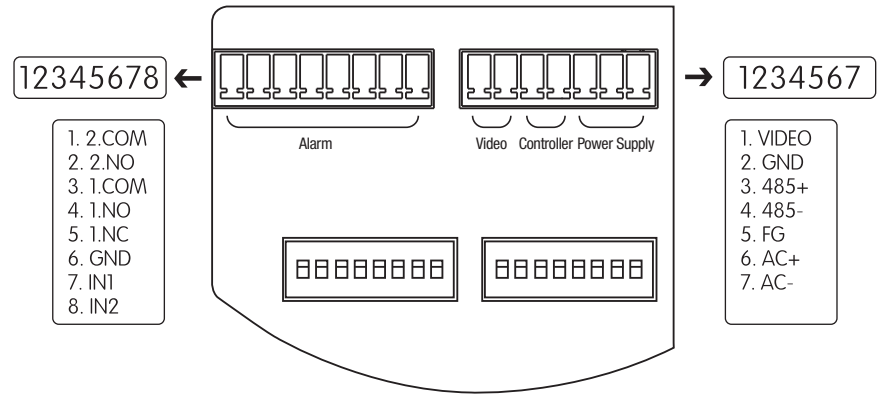
1. Screw Hole
2. Communication Setup Switch
3. ID Setup Switch
4. Video/Communication/Power
5. Alarm

Notes

- For the DIP switch settings, please refer to the "Installing Your Camera" on Page 17.

Camera Wiring Interface Board

For the camera wiring, please refer to the picture below.
The camera's wiring interface board is fitted to the housing, this is sold separately.
(When using coaxial communication, a separate control signal connection is not required.)



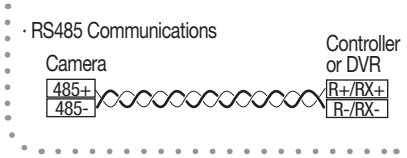
Controller & Auxiliary Signal Connection

No.	Name	Usage
1	2.COM	Alarm Output 2 (Common)
2	2.NO	Alarm Output 2 (Normal Open)
3	1.COM	Alarm Output 1 (Common)
4	1.NO	Alarm Output 1 (Normal Open)
5	1.NC	Alarm Output 1 (Normal Open)
6	GND	Ground
7	IN1	Alarm Input Sensor Terminal 1
8	IN2	Alarm Input Sensor Terminal 2

Power, Video & Communication Signal Connection

No.	Name	Usage
1	VIDEO	Video Output
2	GND	Ground
3	485+	Controller Data Line
4	485-	Controller Data Line
5	FG	Field Ground
6	AC	AC 24V
7	AC	AC 24V

Control Signal Connection



Notes

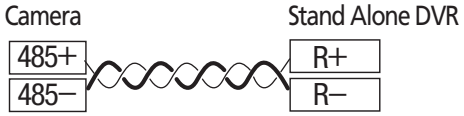
- The maximum power capacity of the built-in relay is 30V DC/2A, 125V AC/0.5A, and 250V AC/0.25A.
- Connecting the power connector and GND incorrectly to the NC/NO and COM ports may cause a short circuit and fire, damaging the camera.

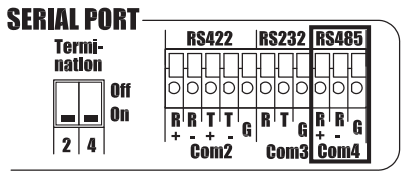
Installing Your Camera

Speed Dome Camera and Appliances Wiring Diagram

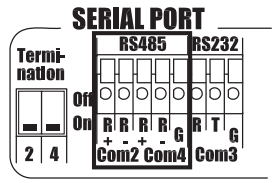
Connecting with Samsung Techwin's "Stand Alone DVR"

· RS-485 :

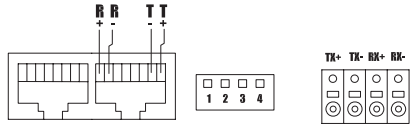




*SVR-1670/1680/1660/1645/960/



*SVR-945

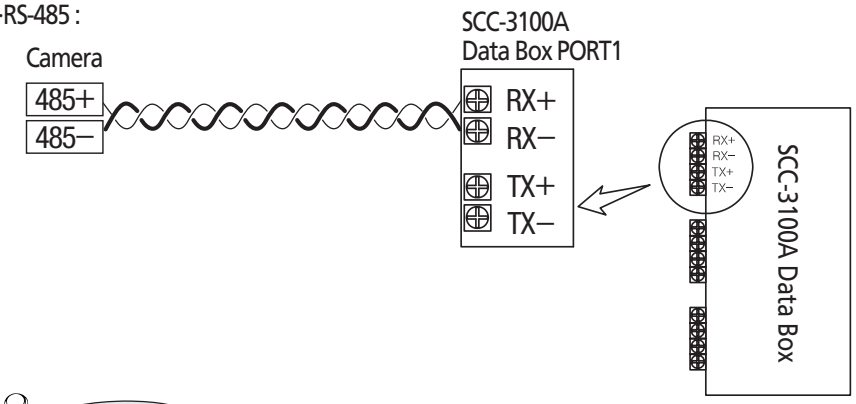


*SVR-1650/1640A/950E

*SVR-940/450

Connecting with the Samsung Techwin Controller SCC-3100A

·RS-485 :

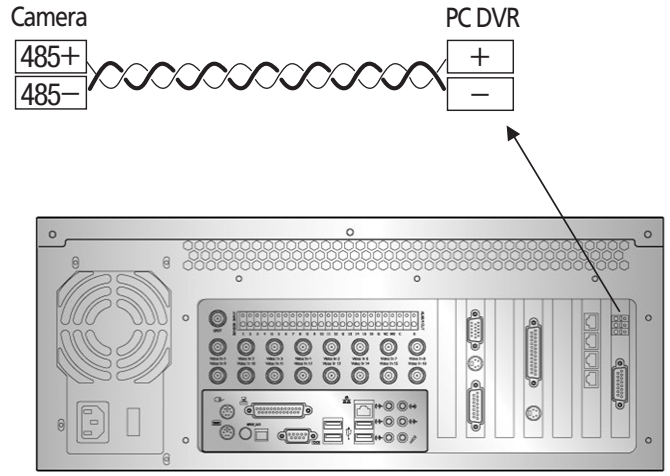


Notes

- To control this camera via a computer, please contact our After-Sales Service or Technology Department.

Connecting with the Samsung Techwin PC DVR

·RS-485 :



SVR-9416/9116/9016

Note :

* The following is a list of DVRs that can fully control the PTZ dome camera via RS-485.
  - 32 Channels: SVR-3200
  - 16 Channels: SVR-1680/1660/1645/1650E/1640A/9416/9116/9016
  - 9 Channels: SVR-960/945/950E/940
  - 4 Channels: SVR-440/450/470/480

* The following is a list of Samsung Techwin DVRs that can fully control the PTZ dome camera via a coaxial cable and RS-485.
  - 16 Channels: SVR-1680C/1660C/1670
  - 9 Channels: SVR-960C

※ This model supports both coaxial and RS-485 communications.

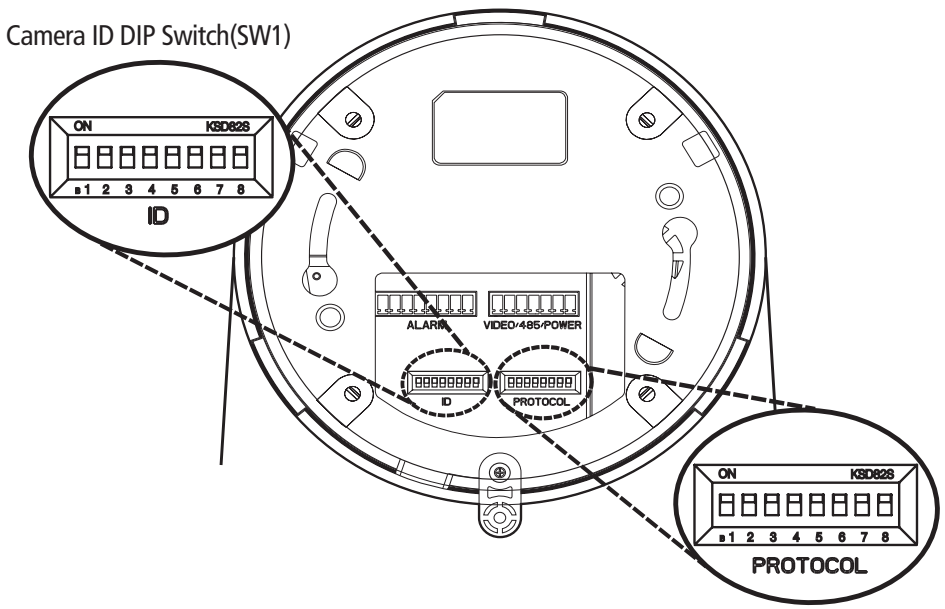
Installing Your Camera

How to Set Up Protocols and ID DIP Switches

You can control various settings of the camera system using the Communication and ID DIP switches. Before installing the product, please set up the DIP switches according to the installation environment.

1. Detach the camera frame from the install base, and place the bottom of the frame toward you as shown in the picture below.
2. Set the switches according to your installation environment. For more detailed setup information, please refer to the chart on the next page.
3. The camera may malfunction if the switches are not fully turned On/Off; please double check the switches before finishing setup.

Camera ID DIP Switch(SW1)



Communication Protocol DIP Switch(SW2)

Communication Protocol DIP Switch Settings (SW2)

* Coaxial communication automatically detects signals, and so does not require a separate communication setup process.

SW2 Pin No.	Purpose
1~4	Protocol Settings
5~6	Baud Rate Settings
7	Response Mode Settings
8	Termination Settings

• Protocol Settings

Select a communication protocol for the camera

No	Protocol	SW2-#1	SW2-#2	SW2-#3	SW2-#4
1	AUTO DETECT	OFF	OFF	OFF	OFF
2	Samsung	OFF	OFF	OFF	ON
3	Pelco-D	OFF	OFF	ON	OFF
4	Pelco-P	OFF	OFF	ON	ON
5	Samsung Elec	OFF	ON	OFF	OFF
6	Panasonic	OFF	ON	OFF	ON
7	Vicon	OFF	ON	ON	OFF
8	Honeywell	OFF	ON	ON	ON
9	AD	ON	OFF	OFF	OFF
10	GE	ON	OFF	OFF	ON
11	BOSCH	ON	OFF	ON	OFF
12	Resetved	ON	OFF	ON	ON
13	Resetved	ON	ON	OFF	OFF
14	Resetved	ON	ON	OFF	ON
15	Resetved	ON	ON	ON	OFF
16	Resetved	ON	ON	ON	ON

• Baud Rate Settings

Select the transfer speed of a selected communication protocol.

No.	Baud Rate(BPS)	SW2-#5	SW2-#6
1	2,400	ON	ON
2	4,800	ON	OFF
3	9,600	OFF	OFF
4	19,200	OFF	ON

Installing Your Camera

• Communication Response Settings

Select a communication response method for the camera and controller: Response or No Response.

	Function	ON	OFF
SW2- #7	Response Mode Switch	Response	No Response

• Termination Settings

To prevent the attenuation of communication signals between the camera and controller, the items at the end of line must be set up with the termination settings.

Camera Input Position	SW2- #8
Termination of Longest Path	ON
On the Path	OFF

* This model is provided with factory defaults of all DIP switches set to OFF. The default settings are shaded in the table.

Notes

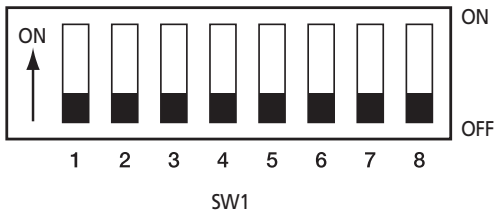
- **To use a third party controller with this product, please contact our After-Sales Service or Technology Department.**
- **Controls Using Different Protocols**

	AD Protocol	VICON Protocol	GE Protocol
Entering Camera OSD	3+Auxilary ON	IRIS OPEN	IRIS OPEN
Exiting Camera OSD	3+Auxilary OFF	IRIS CLOSE	IRIS CLOSE
ENTER	IRIS OPEN	IRIS OPEN	IRIS OPEN
ESC	IRIS CLOSE	IRIS CLOSE	IRIS CLOSE

- **For more information about the protocols, refer to our official website.**

Camera ID DIP Switch Settings (SW1)

To set up camera IDs, refer to the "Camera ID Chart" next.



SW1

• Camera ID Chart

ID	SW1-#1	SW1-#2	SW1-#3	SW1-#4	SW1-#5	SW1-#6	SW1-#7	SW1-#8
1	ON/OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF

ID	SW1-#1	SW1-#2	SW1-#3	SW1-#4	SW1-#5	SW1-#6	SW1-#7	SW1-#8
42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF	OFF
44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
47	ON	ON	ON	ON	OFF	ON	OFF	OFF
48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
55	ON	ON	ON	OFF	ON	ON	OFF	OFF
56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
58	OFF	ON	OFF	ON	ON	ON	OFF	OFF
59	ON	ON	OFF	ON	ON	ON	OFF	OFF
60	OFF	OFF	ON	ON	ON	ON	OFF	OFF
61	ON	OFF	ON	ON	ON	ON	OFF	OFF
62	OFF	ON	ON	ON	ON	ON	OFF	OFF
63	ON	ON	ON	ON	ON	ON	OFF	OFF
64	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
65	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
66	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
67	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
68	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
69	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
70	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
71	ON	ON	ON	OFF	OFF	OFF	ON	OFF
72	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
73	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
74	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
75	ON	ON	OFF	ON	OFF	OFF	ON	OFF
76	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
77	ON	OFF	ON	ON	OFF	OFF	ON	OFF
78	OFF	ON	ON	ON	OFF	OFF	ON	OFF
79	ON	ON	ON	ON	OFF	OFF	ON	OFF
80	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
81	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
82	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
83	ON	ON	OFF	OFF	ON	OFF	ON	OFF
84	OFF	OFF	ON	OFF	ON	OFF	ON	OFF

ID	SW1-#1	SW1-#2	SW1-#3	SW1-#4	SW1-#5	SW1-#6	SW1-#7	SW1-#8
85	ON	OFF	ON	OFF	ON	OFF	ON	OFF
86	OFF	ON	ON	OFF	ON	OFF	ON	OFF
87	ON	ON	ON	OFF	ON	OFF	ON	OFF
88	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
89	ON	OFF	OFF	ON	ON	OFF	ON	OFF
90	OFF	ON	OFF	ON	ON	OFF	ON	OFF
91	ON	ON	OFF	ON	ON	OFF	ON	OFF
92	OFF	OFF	ON	ON	ON	OFF	ON	OFF
93	ON	OFF	ON	ON	ON	OFF	ON	OFF
94	OFF	ON	ON	ON	ON	OFF	ON	OFF
95	ON	ON	ON	ON	ON	OFF	ON	OFF
96	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF
97	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
98	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
99	ON	ON	OFF	OFF	OFF	ON	ON	OFF
100	OFF	OFF	ON	OFF	OFF	ON	ON	OFF
101	ON	OFF	ON	OFF	OFF	ON	ON	OFF
102	OFF	ON	ON	OFF	OFF	ON	ON	OFF
103	ON	ON	ON	OFF	OFF	ON	ON	OFF
104	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
105	ON	OFF	OFF	ON	OFF	ON	ON	OFF
106	OFF	ON	OFF	ON	OFF	ON	ON	OFF
107	ON	ON	OFF	ON	OFF	ON	ON	OFF
108	OFF	OFF	ON	ON	OFF	ON	ON	OFF
109	ON	OFF	ON	ON	OFF	ON	ON	OFF
110	OFF	ON	ON	ON	OFF	ON	ON	OFF
111	ON	ON	ON	ON	OFF	ON	ON	OFF
112	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
113	ON	OFF	OFF	OFF	ON	ON	ON	OFF
114	OFF	ON	OFF	OFF	ON	ON	ON	OFF
115	ON	ON	OFF	OFF	ON	ON	ON	OFF
116	OFF	OFF	ON	OFF	ON	ON	ON	OFF
117	ON	OFF	ON	OFF	ON	ON	ON	OFF
118	OFF	ON	ON	OFF	ON	ON	ON	OFF
119	ON	ON	ON	OFF	ON	ON	ON	OFF
120	OFF	OFF	OFF	ON	ON	ON	ON	OFF
121	ON	OFF	OFF	ON	ON	ON	ON	OFF
122	OFF	ON	OFF	ON	ON	ON	ON	OFF
123	ON	ON	OFF	ON	ON	ON	ON	OFF
124	OFF	OFF	ON	ON	ON	ON	ON	OFF
125	ON	OFF	ON	ON	ON	ON	ON	OFF
126	OFF	ON	ON	ON	ON	ON	ON	OFF
127	ON	ON	ON	ON	ON	ON	ON	OFF

ID	SW1-#1	SW1-#2	SW1-#3	SW1-#4	SW1-#5	SW1-#6	SW1-#7	SW1-#8
128	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
129	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON
130	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
131	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
132	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
133	ON	OFF	ON	OFF	OFF	OFF	OFF	ON
134	OFF	ON	ON	OFF	OFF	OFF	OFF	ON
135	ON	ON	ON	OFF	OFF	OFF	OFF	ON
136	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
137	ON	OFF	OFF	ON	OFF	OFF	OFF	ON
138	OFF	ON	OFF	ON	OFF	OFF	OFF	ON
139	ON	ON	OFF	ON	OFF	OFF	OFF	ON
140	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
141	ON	OFF	ON	ON	OFF	OFF	OFF	ON
142	OFF	ON	ON	ON	OFF	OFF	OFF	ON
143	ON	ON	ON	ON	OFF	OFF	OFF	ON
144	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON
145	ON	OFF	OFF	OFF	ON	OFF	OFF	ON
146	OFF	ON	OFF	OFF	ON	OFF	OFF	ON
147	ON	ON	OFF	OFF	ON	OFF	OFF	ON
148	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
149	ON	OFF	ON	OFF	ON	OFF	OFF	ON
150	OFF	ON	ON	OFF	ON	OFF	OFF	ON
151	ON	ON	ON	OFF	ON	OFF	OFF	ON
152	OFF	OFF	OFF	ON	ON	OFF	OFF	ON
153	ON	OFF	OFF	ON	ON	OFF	OFF	ON
154	OFF	ON	OFF	ON	ON	OFF	OFF	ON
155	ON	ON	OFF	ON	ON	OFF	OFF	ON
156	OFF	OFF	ON	ON	ON	OFF	OFF	ON
157	ON	OFF	ON	ON	ON	OFF	OFF	ON
158	OFF	ON	ON	ON	ON	OFF	OFF	ON
159	ON	ON	ON	ON	ON	OFF	OFF	ON
160	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON
161	ON	OFF	OFF	OFF	OFF	ON	OFF	ON
162	OFF	ON	OFF	OFF	OFF	ON	OFF	ON
163	ON	ON	OFF	OFF	OFF	ON	OFF	ON
164	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
165	ON	OFF	ON	OFF	OFF	ON	OFF	ON
166	OFF	ON	ON	OFF	OFF	ON	OFF	ON
167	ON	ON	ON	OFF	OFF	ON	OFF	ON
168	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
169	ON	OFF	OFF	ON	OFF	ON	OFF	ON
170	OFF	ON	OFF	ON	OFF	ON	OFF	ON

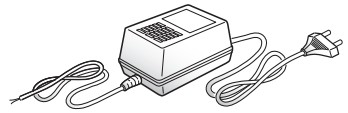
ID	SW1-#1	SW1-#2	SW1-#3	SW1-#4	SW1-#5	SW1-#6	SW1-#7	SW1-#8
171	ON	ON	OFF	ON	OFF	ON	OFF	ON
172	OFF	OFF	ON	ON	OFF	ON	OFF	ON
173	ON	OFF	ON	ON	OFF	ON	OFF	ON
174	OFF	ON	ON	ON	OFF	ON	OFF	ON
175	ON	ON	ON	ON	OFF	ON	OFF	ON
176	OFF	OFF	OFF	OFF	ON	ON	OFF	ON
177	ON	OFF	OFF	OFF	ON	ON	OFF	ON
178	OFF	ON	OFF	OFF	ON	ON	OFF	ON
179	ON	ON	OFF	OFF	ON	ON	OFF	ON
180	OFF	OFF	ON	OFF	ON	ON	OFF	ON
181	ON	OFF	ON	OFF	ON	ON	OFF	ON
182	OFF	ON	ON	OFF	ON	ON	OFF	ON
183	ON	ON	ON	OFF	ON	ON	OFF	ON
184	OFF	OFF	OFF	ON	ON	ON	OFF	ON
185	ON	OFF	OFF	ON	ON	ON	OFF	ON
186	OFF	ON	OFF	ON	ON	ON	OFF	ON
187	ON	ON	OFF	ON	ON	ON	OFF	ON
188	OFF	OFF	ON	ON	ON	ON	OFF	ON
189	ON	OFF	ON	ON	ON	ON	OFF	ON
190	OFF	ON	ON	ON	ON	ON	OFF	ON
191	ON	ON	ON	ON	ON	ON	OFF	ON
192	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
193	ON	OFF	OFF	OFF	OFF	OFF	ON	ON
194	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
195	ON	ON	OFF	OFF	OFF	OFF	ON	ON
196	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
197	ON	OFF	ON	OFF	OFF	OFF	ON	ON
198	OFF	ON	ON	OFF	OFF	OFF	ON	ON
199	ON	ON	ON	OFF	OFF	OFF	ON	ON
200	OFF	OFF	OFF	ON	OFF	OFF	ON	ON
201	ON	OFF	OFF	ON	OFF	OFF	ON	ON
202	OFF	ON	OFF	ON	OFF	OFF	ON	ON
203	ON	ON	OFF	ON	OFF	OFF	ON	ON
204	OFF	OFF	ON	ON	OFF	OFF	ON	ON
205	ON	OFF	ON	ON	OFF	OFF	ON	ON
206	OFF	ON	ON	ON	OFF	OFF	ON	ON
207	ON	ON	ON	ON	OFF	OFF	ON	ON
208	OFF	OFF	OFF	OFF	ON	OFF	ON	ON
209	ON	OFF	OFF	OFF	ON	OFF	ON	ON
210	OFF	ON	OFF	OFF	ON	OFF	ON	ON
211	ON	ON	OFF	OFF	ON	OFF	ON	ON
212	OFF	OFF	ON	OFF	ON	OFF	ON	ON
213	ON	OFF	ON	OFF	ON	OFF	ON	ON

ID	SW1-#1	SW1-#2	SW1-#3	SW1-#4	SW1-#5	SW1-#6	SW1-#7	SW1-#8
214	OFF	ON	ON	OFF	ON	OFF	ON	ON
215	ON	ON	ON	OFF	ON	OFF	ON	ON
216	OFF	OFF	OFF	ON	ON	OFF	ON	ON
217	ON	OFF	OFF	ON	ON	OFF	ON	ON
218	OFF	ON	OFF	ON	ON	OFF	ON	ON
219	ON	ON	OFF	ON	ON	OFF	ON	ON
220	OFF	OFF	ON	ON	ON	OFF	ON	ON
221	ON	OFF	ON	ON	ON	OFF	ON	ON
222	OFF	ON	ON	ON	ON	OFF	ON	ON
223	ON	ON	ON	ON	ON	OFF	ON	ON
224	OFF	OFF	OFF	OFF	OFF	ON	ON	ON
225	ON	OFF	OFF	OFF	OFF	ON	ON	ON
226	OFF	ON	OFF	OFF	OFF	ON	ON	ON
227	ON	ON	OFF	OFF	OFF	ON	ON	ON
228	OFF	OFF	ON	OFF	OFF	ON	ON	ON
229	ON	OFF	ON	OFF	OFF	ON	ON	ON
230	OFF	ON	ON	OFF	OFF	ON	ON	ON
231	ON	ON	ON	OFF	OFF	ON	ON	ON
232	OFF	OFF	OFF	ON	OFF	ON	ON	ON
233	ON	OFF	OFF	ON	OFF	ON	ON	ON
234	OFF	ON	OFF	ON	OFF	ON	ON	ON
235	ON	ON	OFF	ON	OFF	ON	ON	ON
236	OFF	OFF	ON	ON	OFF	ON	ON	ON
237	ON	OFF	ON	ON	OFF	ON	ON	ON
238	OFF	ON	ON	ON	OFF	ON	ON	ON
239	ON	ON	ON	ON	OFF	ON	ON	ON
240	OFF	OFF	OFF	OFF	ON	ON	ON	ON
241	ON	OFF	OFF	OFF	ON	ON	ON	ON
242	OFF	ON	OFF	OFF	ON	ON	ON	ON
243	ON	ON	OFF	OFF	ON	ON	ON	ON
244	OFF	OFF	ON	OFF	ON	ON	ON	ON
245	ON	OFF	ON	OFF	ON	ON	ON	ON
246	OFF	ON	ON	OFF	ON	ON	ON	ON
247	ON	ON	ON	OFF	ON	ON	ON	ON
248	OFF	OFF	OFF	ON	ON	ON	ON	ON
249	ON	OFF	OFF	ON	ON	ON	ON	ON
250	OFF	ON	OFF	ON	ON	ON	ON	ON
251	ON	ON	OFF	ON	ON	ON	ON	ON
252	OFF	OFF	ON	ON	ON	ON	ON	ON
253	ON	OFF	ON	ON	ON	ON	ON	ON
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

Preparing Adapter and Cables (Sold Separately)

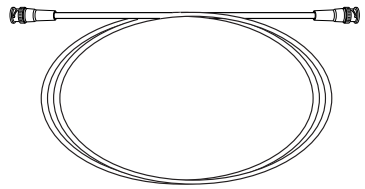
– Power Adapter

Power adapter has the capacity of AC24V 2.5A.



– Video Cable

The camera's video output port is connected to the monitor with a BNC coaxial cable, shown below : If the distance between the camera and the monitor exceeds the recommended maximum, please use an auxiliary video amp.



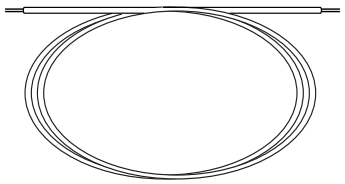
Distance	Recommended Cable Specification
300m	4C2V(RG-59/U)
450m	5C2V(RG-6/U)
600m	7C2V(RG-11/U)

Notes

- **If the camera is controlled through coaxial communication, please use a video amp intended for coaxial communications. Regular video amps do not transfer coaxial signals.**

– Communications Cable

For the camera to communicate with the controller, a RS-485 communications line is required. To ensure the quality of long distance communication and the accuracy of the overall communication it is recommended using a twisted pair cable such as UTP.



*** Caution!**

Depending on the camera's environment, the communications distance may vary.

Notes

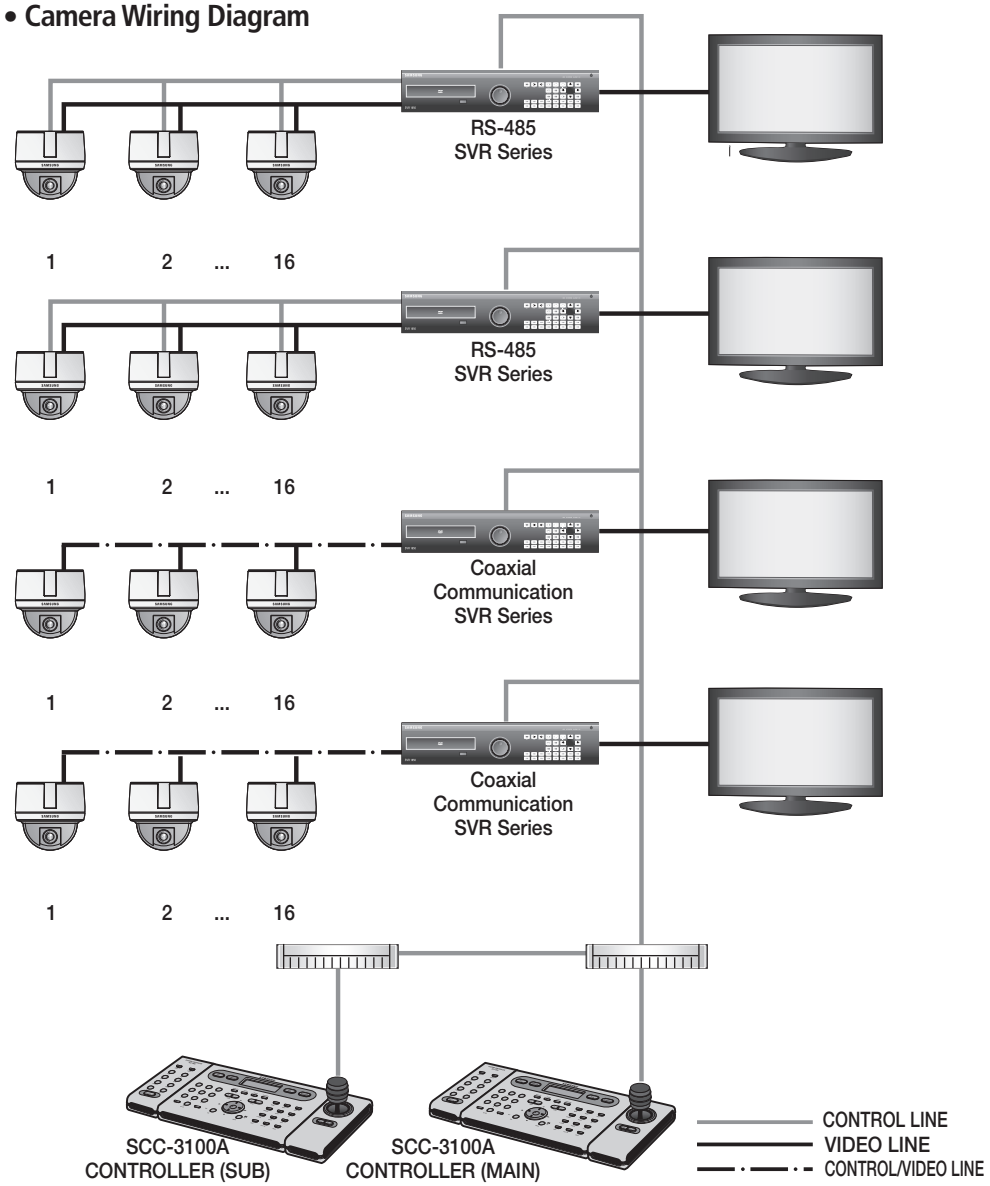
- **Power Adapter, Video cable and communications cable are not provided in this product's package.**

Installing Your Camera

Preparing and Installing Camera Bracket

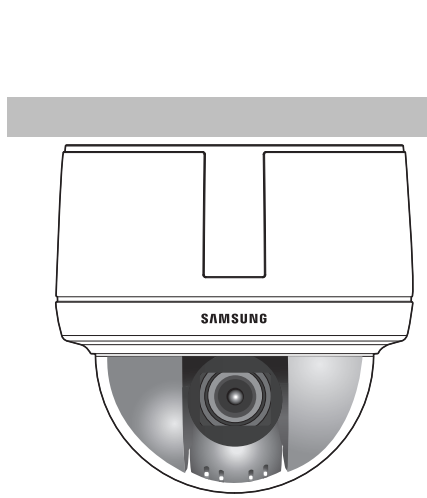
For the installation guidelines for the brackets and housings, refer to the user's manual enclosed with the bracket or housing that is sold separately.

- **Camera Wiring Diagram**



Installation Examples

- The pictures below show the front view of the camera installed with a wall or flush bracket. For more instructions on installing the camera, please refer to the following guidelines.



Wall Mount Type Installation

Flush Mount Type Installation

Installing Your Camera

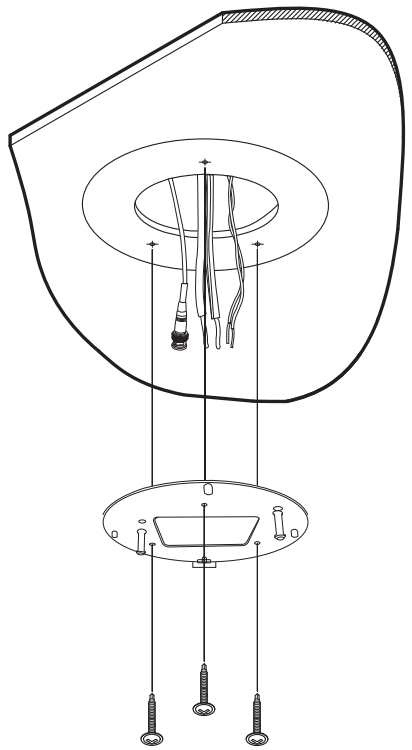
On-Ceiling Mount Type Installation Example

1. Attach Template

Attach the template on the ceiling, facing the "Front" mark to the main monitoring direction. Drill a hole in the ceiling according to the 60 mm diameter hole marked on the template, and then drop the camera cables down through the hole.

2. Mount Bracket

Using the 4 screws, install the mount brackets on the ceiling, matching its directional guides with those of the template.

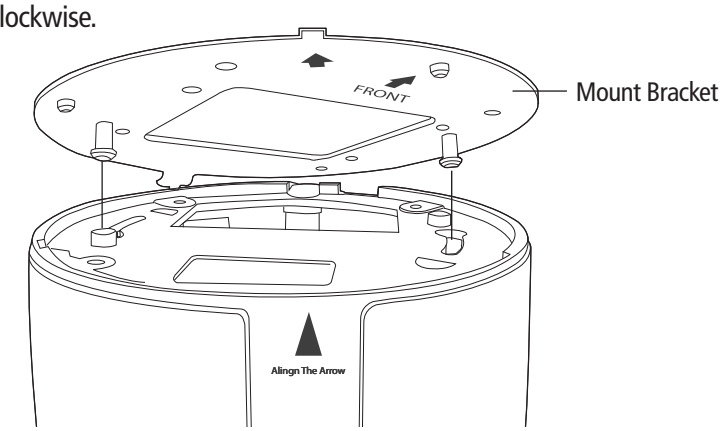


Notes

- Do not connect the camera to a power outlet until the installation is complete. Supplying power in the middle of the installation may cause fire or damage the product.

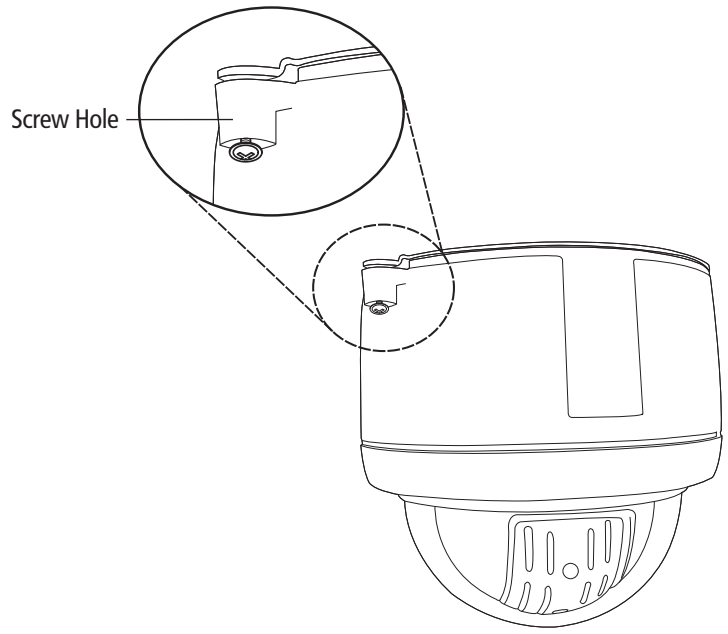
3. Assemble Camera & Bracket

- Cameras on the sides 'Align The Arrow' triangle corner mount bracket and the arrow shows a match to match.
- Insert the mount bracket to the matching holes in the camera, and then turn the camera clockwise.



4. Secure the Camera

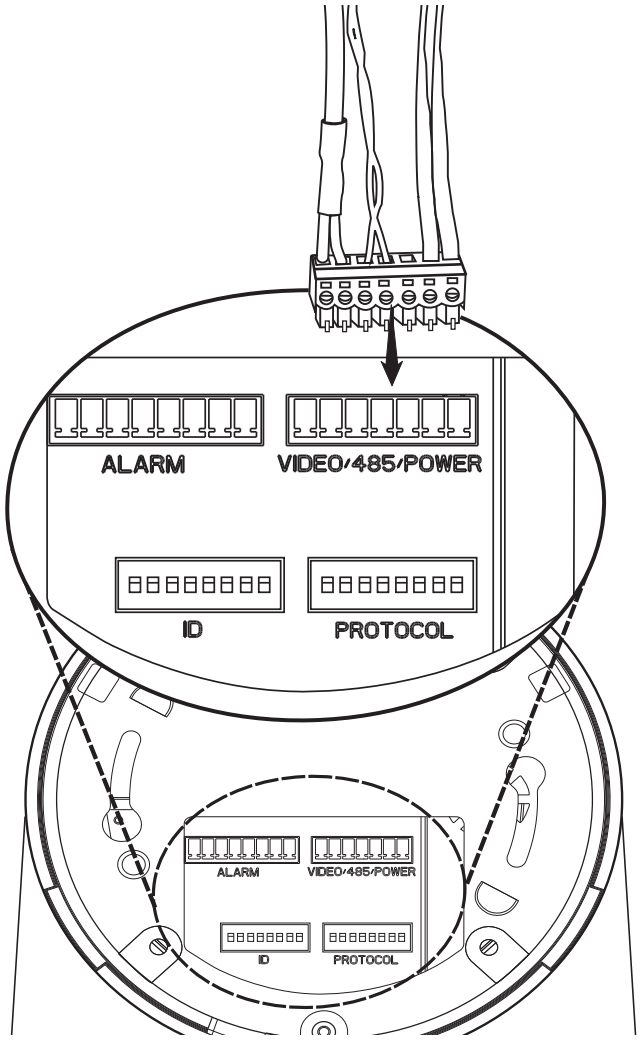
Match the screw holes in the camera and mount bracket, and then fasten with the screw.



Installing Your Camera

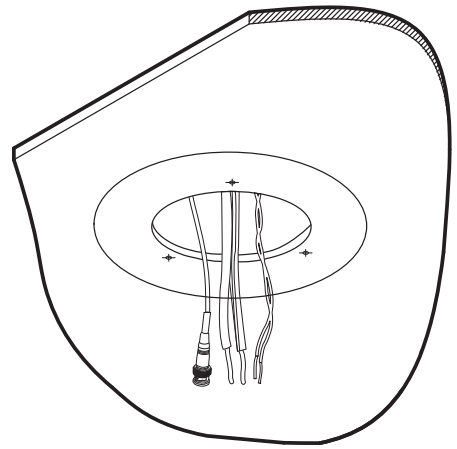
5. Connect Cables
Connect each camera cable to the proper terminals on the bottom of the camera. For more detailed instructions, please refer to Page 13:"Camera Wiring Diagram".

6. Camera DIP Switch Setup
DIP switches for communication and ID setup are located on the bottom of the camera. For more instructions, please refer to Page 16.

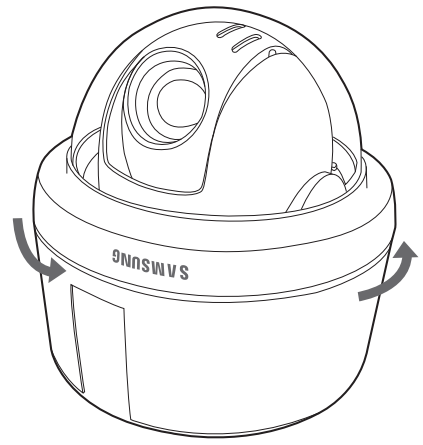


Flush Mount Type Installation Example

1. Drill Hole on the Ceiling
Attach the template, and then drill a hole according to the 120 mm diameter hole marked on the template. Drop down the camera cables through the hole. Drill another small hole for a screw to secure the camera.



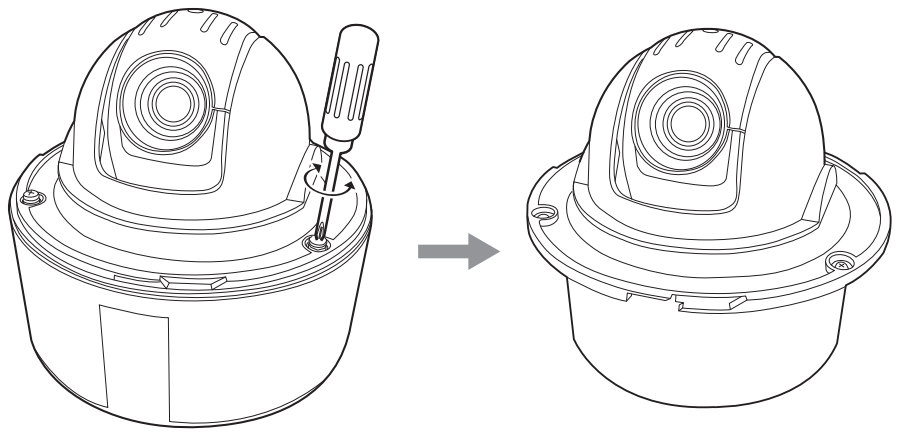
2. Exiting Camera OSD
Rotate the dome cover counterclockwise to detach it from the camera.



Installing Your Camera

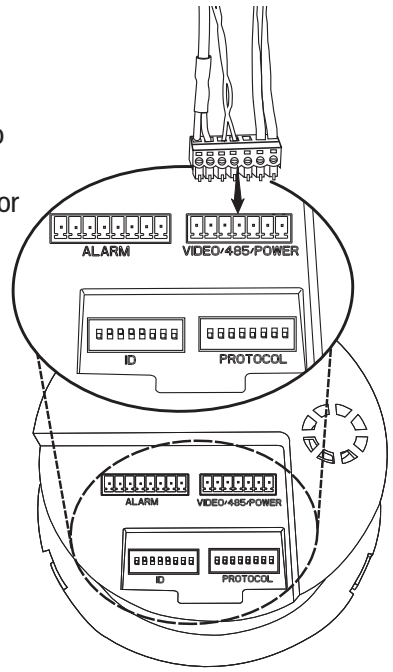
3. Detach the Mount Housing

Remove the 3 screws, and then detach the mount housing from the camera.



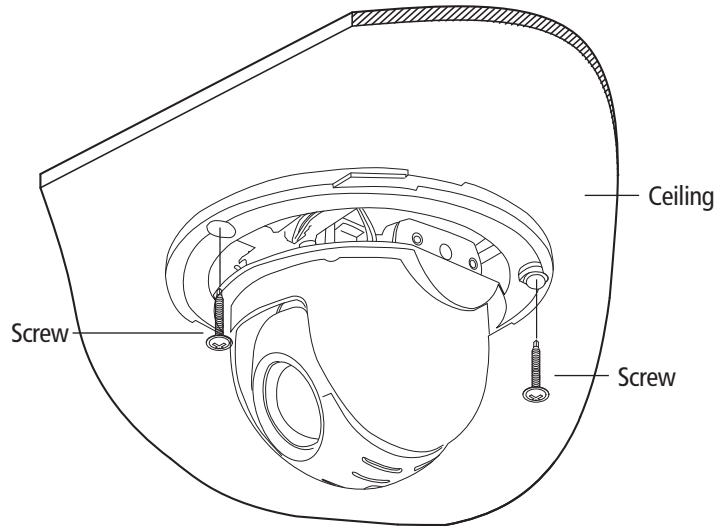
4. Connect Cables & Camera Setup

Connect each camera cable to the proper terminals on the bottom of the camera (Refer to Page 13: "Camera Wiring Diagram"). Configure the DIP switches on the bottom of the camera for communication and ID (Refer to Page 16).



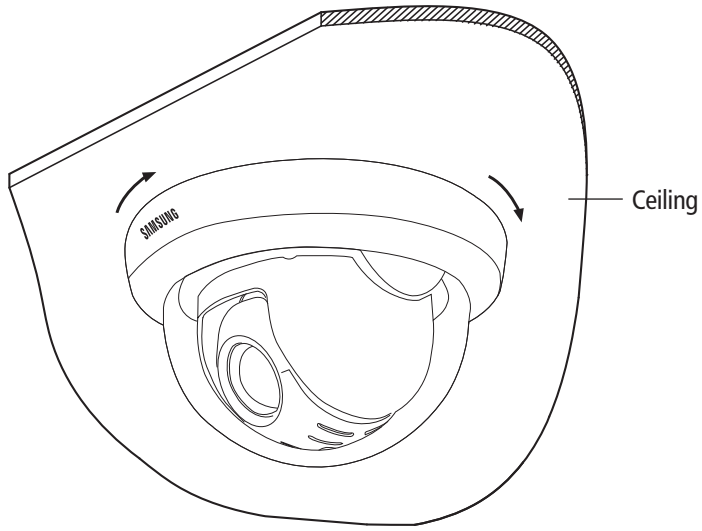
5. Install Camera

Install Camera Fit the camera to the hole on the ceiling, and then secure the camera using 3 Product-enclosed Fixture Screws (M4x20).



6. Assemble Dome Cover

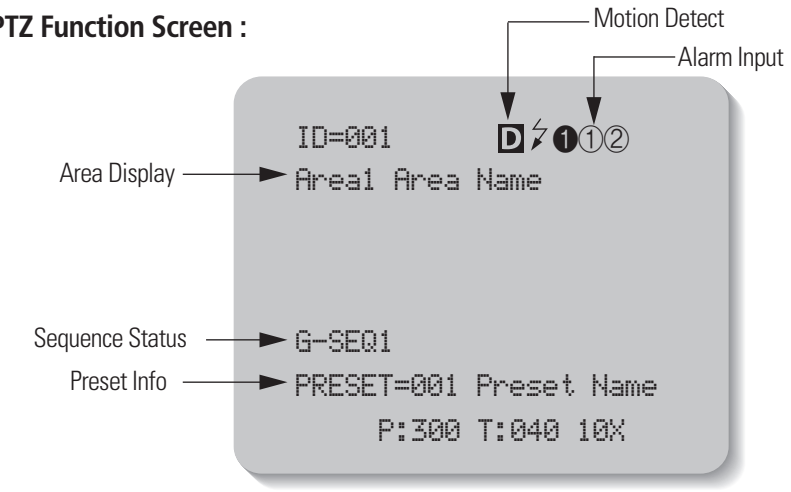
Assemble Dome Cover Insert the grooves on the dome cover into ones on the camera, and then turn clockwise to fasten.



Interface Symbols

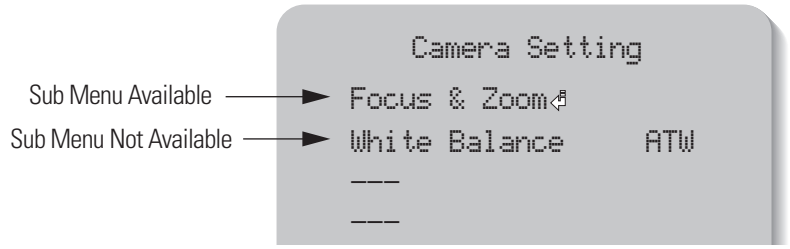
- **Motion Detection Standby/Operation Display :**
  - When in standby mode, the "D" in the upper right of the screen blinks and then changes to "🚶" if motion is detected.
- **Alarm Input Port Status Display :**
  - "①","②" in the upper right of the screen blink.
- **Current Alarm Port Display According to Input Alarm Ports(Priority) :**
  - Only one of "⚡❶","⚡❷" in the upper right of the screen blinks.
- **Preset Number Display Settings :**
  - '*' : If a preset number is already available
  - 'H' : If a preset location is the camera's home position
- **If an OSD Menu has Sub Menus :**
  - "↩" displays at the end of the menu.
- **If an OSD Menu Does Not Have Sub Menus :**
  - No symbol appears at the end of the menu.

- **PTZ Function Screen :**



- **Preset Number Setting Screen :**

- **OSD Menu Screen :**



Operating Your Camera

- **Panning and Tilting**
  - Use the joystick of the controller or its direction buttons.
- **Controlling Zoom**
  - Move the joystick clockwise (Tele) or counterclockwise (Wide), or use the zoom buttons.
- **Accessing Screen Menus**
  - Press the Menu or OSD button on the controller.

✻ For more detailed information about controls using a third party controller or a DVR, refer to the user's manual of the product.

OSD Commands, Function Chart, and Menu Controls

This dome camera can be operated using two methods: Using hot keys on its dedicated controller, or accessing the OSD (On Screen Display) on the video output. The OSD menu commands are as follows:

Command	Function
Move the joystick up/down/left/right	Moves the OSD menus up/down/left/right, respectively.
Enter/Focus Far	Selects a menu and allows access to the sub menus.
ESC/Focus Near	Cancels a command and moves back to an upper-level menu.

Operating Your Camera

***OSD Menu Chart**

P1	P2	P3	P4	P5
Camera Setting	Zoom/Focus	Focus Mode	Auto/Manual/OneShot	
		Zoom Tracking	Mode	AUTO/OFF/ TRACKING
			Speed	SLOW/MEDIUM/ FAST
		Digital Zoom	OFF/2X/3X/4X/5X/…/16X	
	White Balance	ATW/ATW(IN)/ATW(OUT)		
		AWC	Press Enter to Start AWC	
		Manual	Red	0~100
			Blue	0~100
	Exposure	Brightness	0~100	
		Iris	AUTO	
			MANUAL	Iris Value(CLOSE, F1.6~F28)
		Shutter	---(Displays ESC in the Manual IRIS Mode)	
			A.FLK	
			MANUAL	Shutter Level
		Sens-Up	---(When the Shutter is A.FLK or MANUAL)	
			OFF	
			Auto	Sens-up Limit X2/ X4…X512
	Back Light	OFF		
		HLC	Level	LOW/MEDIUM/ HIGH
			Mask Tone	0~10
		BLC	Level Change/Up/Down/Left/Right/ Increase/Decrease	
	AGC	OFF/LOW/MEDIUM/HIGH		
		MANUAL	AGC Level	
	SSNR	OFF/LOW/MEDIUM/HIGH		
	SSDR	Mode	ON/OFF	
		Range	NARROW/WIDE	
		Level	0~15	
	Day/Night	Mode	Auto	
			Color	Burst Level(0~100)
			BW	Burst ON/OFF
		Duration	SLOW/FAST	
		Dwell Time	5/7/10/15/20/30/40/60 SEC	

	Others	Sync	INTERNAL	
			LINE LOCK	Line Lock Phase (0~359)
		Image Adj.	Sharpness	1~32
			Color	0~100
		Freeze	ON/OFF	
Sequence Setting	Preset	Setting/Edit/Home Position/Execute/Clear/Status		
	Swing SEQ.	Pan Swing	Setting/Execute/Clear	
		Tilt Swing	Setting/Execute/Clear	
		P&T Swing	Setting/Execute/Clear	
	Group SEQ.	Group1~6	Setting/Execute/Clear	
	Tour SEQ.	Setting/Execute/Clear		
	PTZ Trace	Trace1~4	Replay/Replay Once/Memorize/Clear	
	Auto Run	Mode	OFF	
			SCHEDULE	Sunday~Saturday
			A.PAN	AutoPan Speed/Tilt Angle
			TRACE	Trace(1~4)
			TOUR	
			GROUP	Group No(1~6)
			SWING	Swing Mode (PAN,TILT,P/T)
			PRESET	Preset No(1~255)
			HOME	
		Time	5~30(SEC), 1~5(MIN)	
	Power On Resume	ON/OFF		
P/T Setting	Pan Limit	Position		
		Activation	ON/OFF	
	Tilt Limit	Position		
		Activation	ON/OFF	
	Area Setting	Area1~8	Area Name	
			Position	Left Upper Bound/ Right Lower Bound
			Activation	ON/OFF
	Area Masking	Mask1~8	Position	Left Upper Bound/ Right Lower Bound
			Activation	ON/OFF
	Prop.P/T	ON/OFF		
	Digital Flip	ON/OFF		
	Image Hold	ON/OFF		
	Jog Speed	Manual/10/20/30/40/50/60		
	Max Speed Level	1~7		

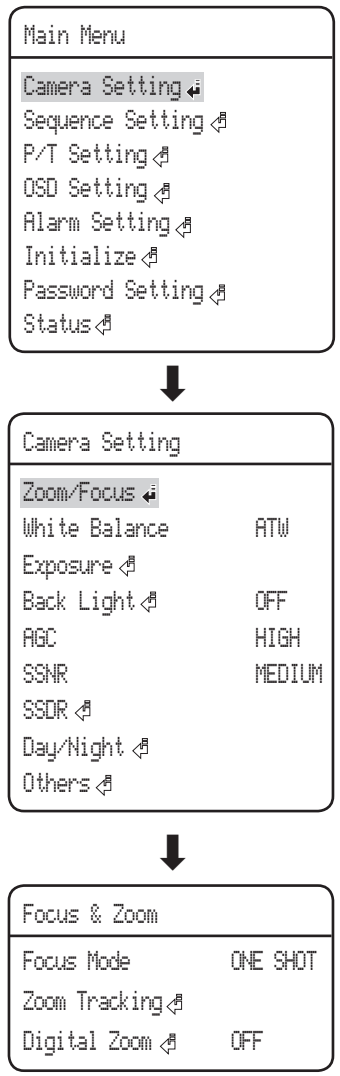
OSD Setting	Camera ID	ON/OFF		
	Camera Name	ON/OFF		
		Edit	Camera Name	
	Preset Number	ON/OFF		
	Preset Name	ON/OFF		
		Edit		
	Sequence Status	ON/OFF		
	Area Name	ON/OFF		
	PTZ Position	ON/OFF		
	Language	ENGLISH/CHINESE/FRENCH/GERMAN/SPANISH/ITALIAN/ PORTUGUES/KOREAN		
	Others	Direction	On/Off	ON/OFF
			Set North Dir.	Set North Direction
		Clock Setting	Display	ON/OFF
			Date Format	
			Set Date	
			Time Format	
			Set Time	
Alarm Setting	Alarm Enable	ON/OFF		
	Alarm Input	In1	MOD:NC/NO/OFF, P:1~2 SEQ:OFF/HOME/PRESET/SWING/GROUP/ TOUR/TRACE/A.PAN	
		In2		
	Alarm Output	Setting 1~2	1~2,MD,AUX	
		Timer 1~2	OFF/MOMENTARY	
			ON	1~60(Sec), 1~60(Min)
	MD Dwell Time	OFF		
		ON	1~60(Sec), 1~60(Min)	
Initialize	Power On Reset	Cancel/Execute		
	Factory Default Set	Cancel/Execute		
	Camera Default Set	Cancel/Execute		
	Auto Refresh	OFF		
		ON	1~7Day(s)	
Password Setting	On/Off	ON/OFF		
	Edit Password	Old Pwd/New Pwd		
Status				

Camera Setting

1. Zoom/Focus Settings

1.1 Focus Mode and Digital Zoom Setting Menu

▶ Main Menu/Camera Setting/Focus & Zoom



Focus Mode :

- AUTO : Performs continuous auto-focus.
- MANUAL : Changes the camera mode to Manual Focus.
- ONESHOT : Auto-focuses the camera once after the Pan, Tilt, or Zoom function is used.

Digital Zoom :

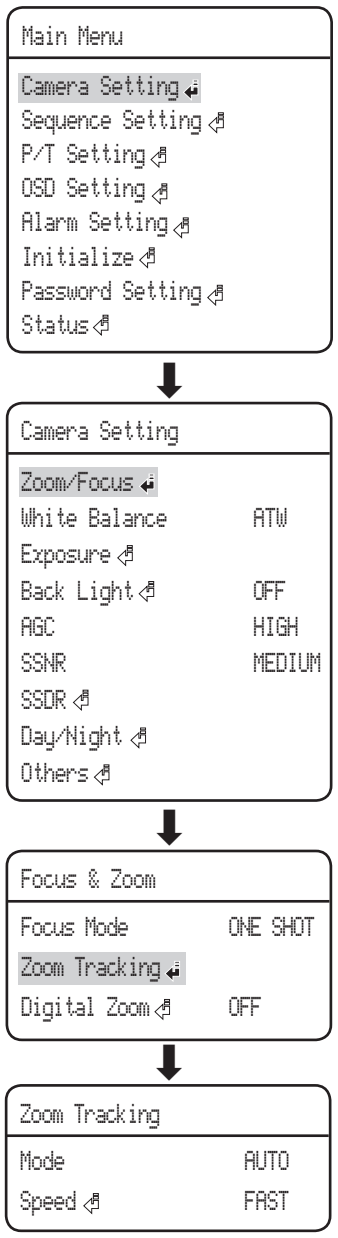
Enables the maximum digital zoom.
Setting the digital zoom to 16X provides a total zoom of 192X.

Notes

- Unlike the optical zoom, the graphics quality of the digital zoom decreases as its zoom ratio increases.
- The auto-focus function may not operate normally under the following conditions :
  - When background illumination is low
  - While Slow-Shutter is in operation
  - If the zoom level is set too high
  - When background illumination is too high
  - If a long distance object and a close distance object appear together within a monitoring area
  - If there is no contrast, e.g. Ceiling or a wall
  - If the camera is facing a thin horizontal line
- Auto Focus focuses on an object in the center of the screen; objects around the screen edges may not be properly in focus.

1.2 Zoom Tracking

▶ Main Menu/Camera Setting/Focus & Zoom/Zoom Tracking



Through this menu you can set up the camera's focus mode when zooming.

Mode :

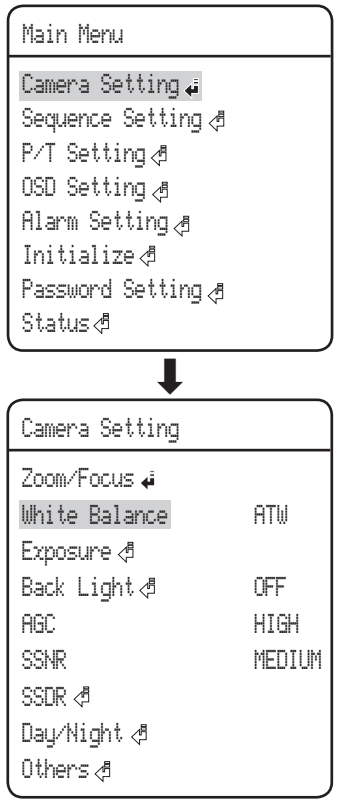
- AUTO : Auto-focuses when zooming.
- TRACKING : Focuses manually when zooming.
- OFF : Disable the focus modes when zooming. (Full manual mode)

Speed :

- SLOW/MEDIUM/FAST : Adjusts the zooming speed.

2. White Balance

▶ Main Menu/Camera Setting/White Balance



The White Balance menu adjusts the balance of the screen colors under different lighting conditions.

- ATW : Adjusts the screen color automatically.
- ATX(IN) : Adjusts the screen color to be optimal in an indoor environment. (Operating Temperature: about 4,500°K ~ about 8,500°K)
- ATW(OUT) : Automatically adjusts the screen color to be optimal in bright outdoors environments.

※ This product is designed to be used indoors Installing outdoors may cause the product to malfunction. (Operating Temperature: about 1,700°K ~ about 11,000°K)

- AWC : Adjusts the screen color to be optimized to the current lighting and monitor conditions. Using this setting may require an readjustment if the lighting conditions changes.
- MANUAL : Enables customization of the Red and Blue gains.

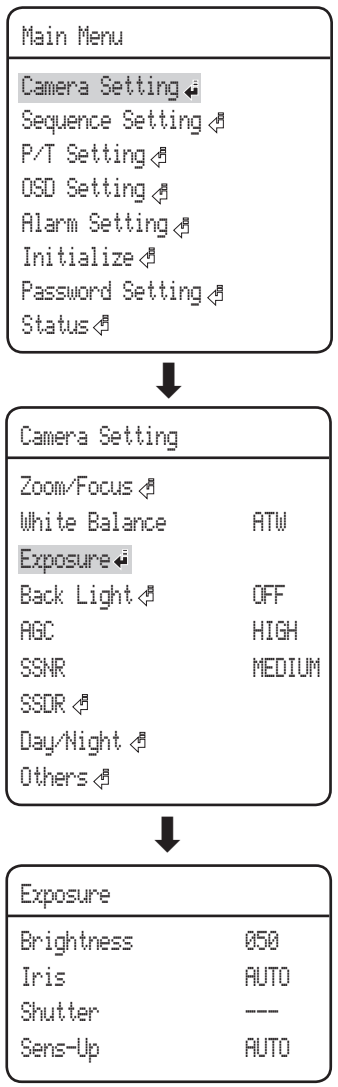
Notes

White Balance may not work properly under the following conditions.

1. When the color temperature of the environment surrounding the subject is out of the control range.
2. When the ambient illumination of the subject is dim.
3. If the camera is directed towards a fluorescent light or is installed in a place where illumination changes dramatically, White Balance adjustments may not deliver consistent results.

3. Exposure

▶ Main Menu/Camera Setting/Exposure



The Exposure settings are to control the camera's exposure meter.

- **Brightness :** Adjusts the screen brightness. (Over 50: Brighter, Under 50: Darker)
- **Iris :**
  - AUTO : Automatically adjusts the exposure meter.
  - MANUAL : Enables manual adjustment of the exposure meter. (Over 50: Brighter, Under 50: Darker)
- **Shutter :** Controls the camera's electronic shutter.
  - --- : The shutter speed is fixed at 1/60 for NTSC and 1/50 for PAL. Operates when Iris is on the Auto Mode.
  - ESC : Adjusts the shutter speed automatically according to the screen brightness. Operates when Iris is on the Manual Mode.
  - A.FLK : Select this setting when you experience picture flickering. Flickering can happen when artificial lighting frequencies clash with camera frame rates.
  - MANUAL : Enables manual adjustment of the shutter speed.
- **Sens-Up :**
  - AUTO : Automatically detects light levels and maintains a clear picture at night or under low-light conditions.
  - SENS-UP LIMIT : Adjusts to the maximum-powered zoom per frame.

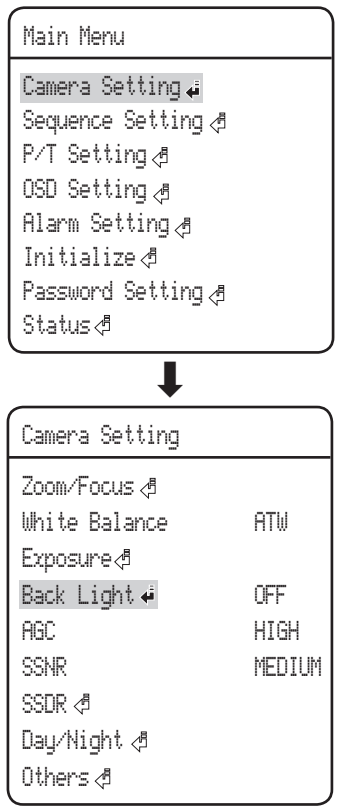
Notes

- **For optimal performance of the A.FLK mode, avoid using the mode in conjunction with Backlight.**
- **While the Internal Sync mode is in effect, setting the shutter to '---' and facing the camera directly to a bright light source may cause poor camera performance.**
- **Sens-Up is disabled when the shutter is in Manual or A. FLK mode.**

4. Backlight

4.1 Backlight Mode Settings

▶ Main Menu/Camera Setting/Back Light

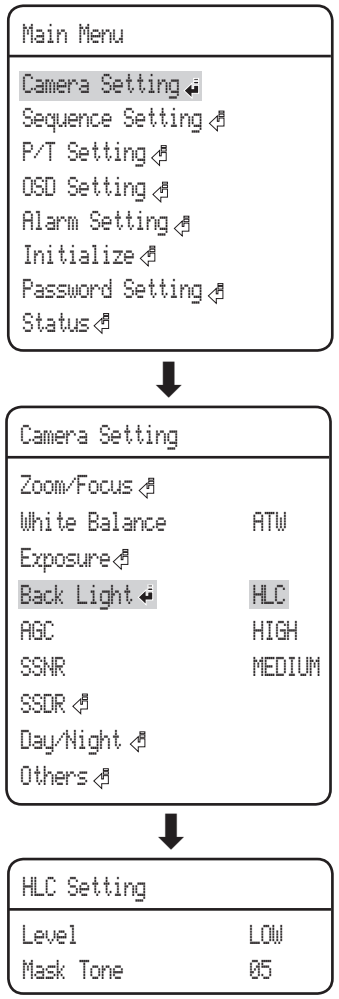


Unlike other cameras, Samsung Techwin's unique W-V DSP chip gives you a clear image of the subject even with bright backlight.

- **Back Light Mode :**
  - OFF : Disables the Backlight mode.
  - HLC : Activates the Highlight Compensation (HLC) mode.
  - BLC : Activates a user defined backlight compensation mode.

4.2 HLC

▶ Main Menu/Camera Setting/Back Light/HLC



HLC masks strong light sources from the camera lens, blocking them from saturating the monitor screen.

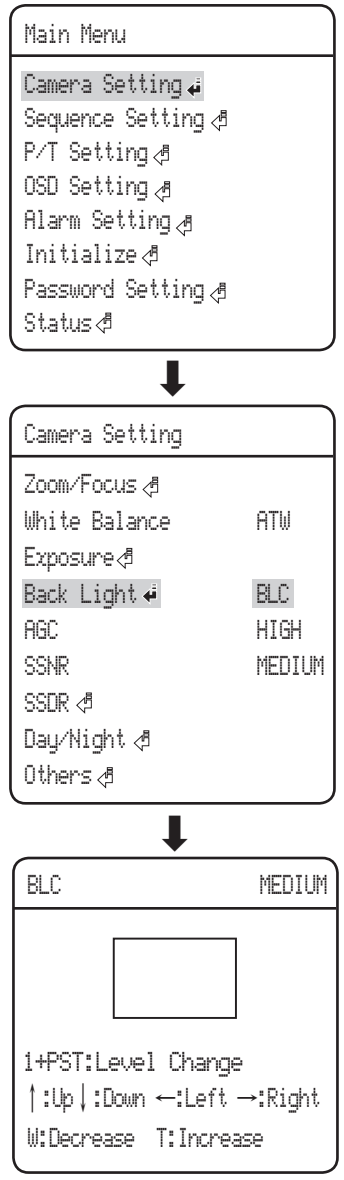
- **Level :**
  Three HLC operation levels are available: LOW, MEDIUM, and HIGH.
- **Mask Tone :**
  Adjusts the masking brightness.

Notes

- HLC performance varies depending on the size of bright areas on the screen; please set the installation angle of your camera to at least 30 degrees for the best HLC performance.
- HLC activates only in Night mode when the camera receives a certain amount of a highlight in the dark.
- HLC does not activate in Night mode when there is no light or too much light.
- HLC does not activate while the Digital Zoom mode is ON.

4.3 BLC Setting

▶ Main Menu/Camera Setting/Back Light/BLC

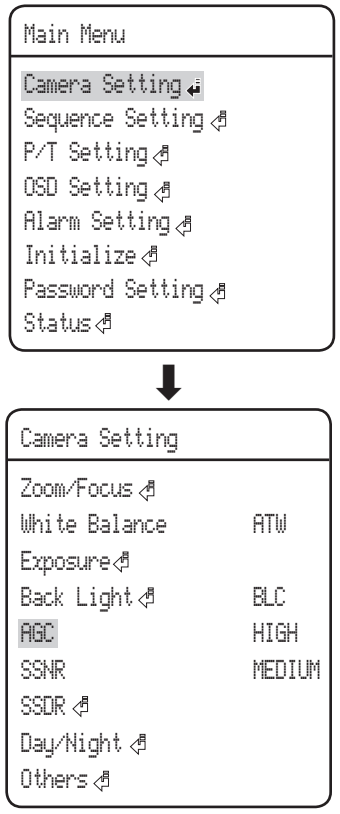


You can selectively choose a screen area to see objects within the area more clearly than others.

- **Four-direction Joystick Controls :**
  - Moving the joystick in all four directions—upward, downward, left, and right—adjusts the location and size of a selected area.
- **Zoom Control :**
  - Zoom Tele : Enlarges the size of a selected area.
  - Zoom Wide : Reduces the size of a selected area.
- **Changing Levels:**
  - To change the level from LOW to MEDIUM or HIGH, press the number 1 and Preset keys.

5. AGC

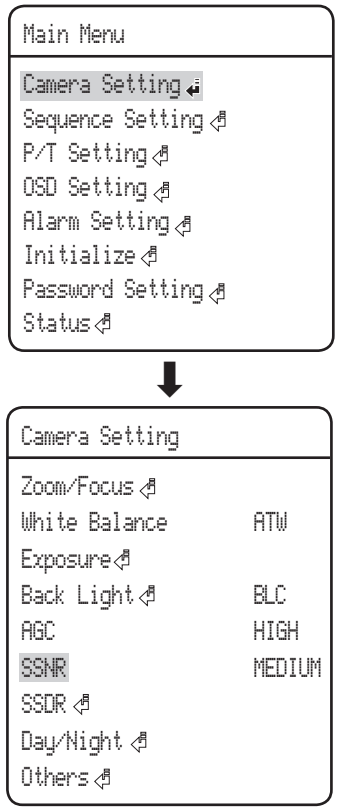
▶ Main Menu/Camera Setting/AGC



AGC (Automatic Gain Control) adjusts the camera's gain control and the screen brightness if the camera has captured an object under low-light conditions.
The OFF, LOW, MEDIUM, HIGH, and MANUAL modes are available.

6. SSNR (Samsung Super Noise Reduction)

▶ Main Menu/Camera Setting/SSNR



SSNR significantly reduces the amount of low luminance noise.

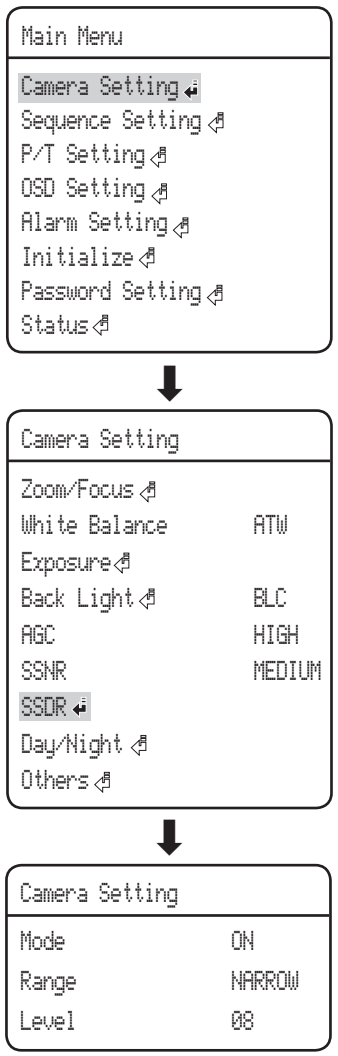
- OFF : Disables the noise reduction function.
- LOW : Reduces only a small amount of noise, but generates almost no afterimage.
- MEDIUM : The most commonly used mode. Reduces a suitable amount of noise while generating a subtle afterimage.
- HIGH : Reduces noise significantly, but generates obvious afterimages.

Notes

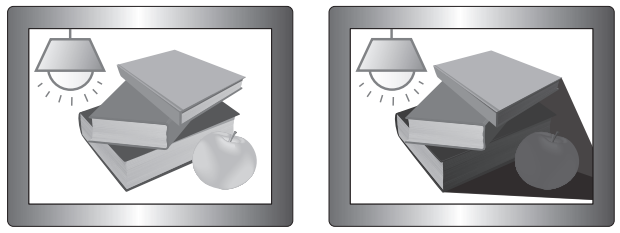
- SSNR is disabled when the AGC mode is turned off.

7. SSDR(Samsung Super Dynamic Range)

▶ Main Menu/Camera Setting/SSDR



SSDR illuminates darker spots of an image while retaining the same light level for brighter spots to even out the overall brightness of the image with high contrast between bright and dark spots.



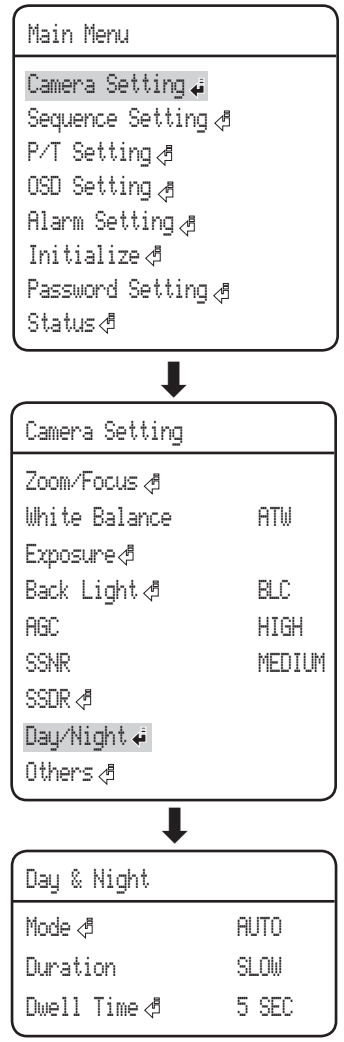
SSDR ON

SSDR OFF

- Mode : Enables or disables SSDR.
- Range : Defines a range of SSDR.
- Level : Changes the contrast between bright and dark spots by the level.

8. Day & Night

▶ Main Menu/Camera Setting/Day/Night



The Day & Night function allows the camera to switch between the Color and B/W modes.

Modes :

- Auto : Operates in Color mode most times, and switches to B/W mode if a low light level is detected during nighttime.
- Color : Operates in Color mode at all times.
- BW : Operates in B/W mode at all times. By using the Burst On/Off sub menu, burst signals can be retained or disabled.

✻ If the camera is in B/W mode and connected to equipment that requires external sync through burst signals, set the Burst On/Off option to "On."

Duration :

The camera's light sensitivity is adjustable as in the chart below. The camera's ambient light diversion performance may vary depending on its environment.

	Color → B/W	B/W → Color
Fast	2.5 Lux	4 Lux
Slow	0.8 Lux	6 Lux

Dwell Time :

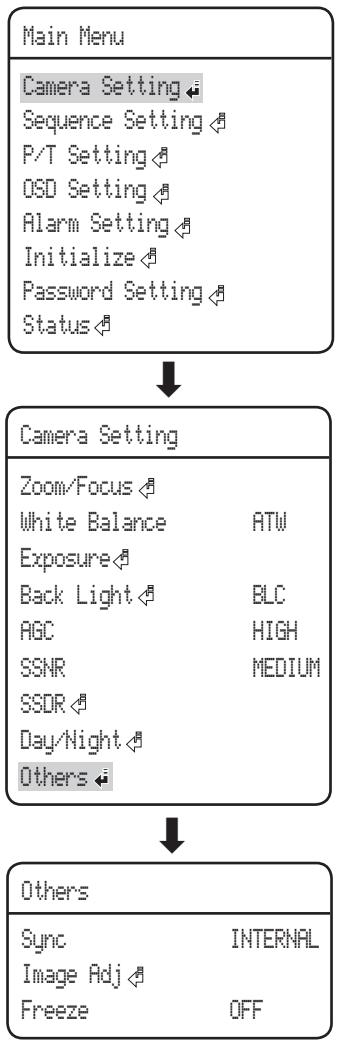
The duration of both the lighting conditions can be customized to let the camera delay the switching between the daytime and night-time settings.

Notes

- The Auto mode is not available when AGC is OFF. (Only the COLOR and B/W modes are available.)
- Using B/W mode under sunlight or a halogen lamp may decrease the focusing performance.

9. Others

▶ Main Menu/Camera Setting/Others



Sync :

- INTERNAL : Synchronizes the camera's output timing to the internal crystal.
- LINE LOCK: Synchronizes the camera's output timing to the AC adapter power to synchronize multiple cameras. This option is useful when using a switch such as Matrix Switcher.
- LINE LOCK PHASE : Enables setting the adapter's synchronization phase between 0 and 360°.

Image Adj :

- Sharpness : Sharpens outlines of an image.
- Color : Adjusts the color density of an image.

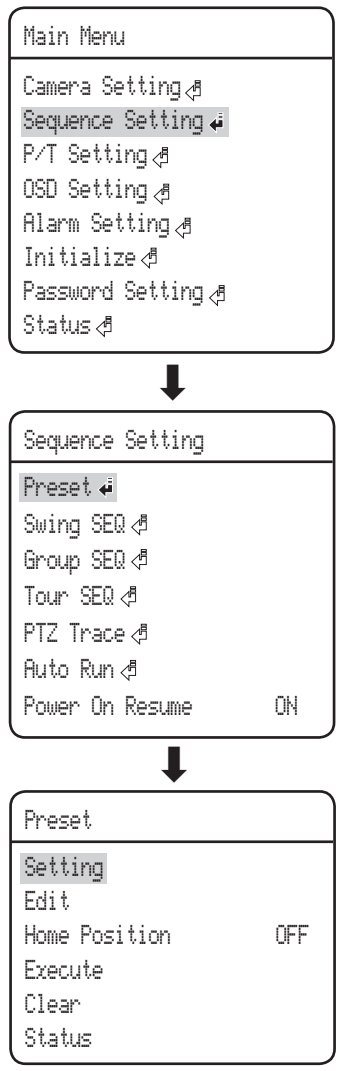
Freeze : Stops or reanimates an image.

Sequence Setting

10. Preset

10.1 Preset Location Saving

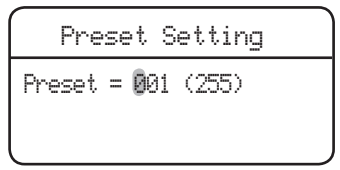
▶ Main Menu/Sequence Setting/Preset/Setting



This function enables the memorization of a selected location and activates the Pan, Tilt, and Zoom functions at that location. Saved locations can be recalled using the Preset Execute command.

Setting Up Preset Numbers :

Selecting the Preset Setting menu brings up a screen as shown below. Move the joystick in all four directions to select the desired number.



Saving Preset Locations :

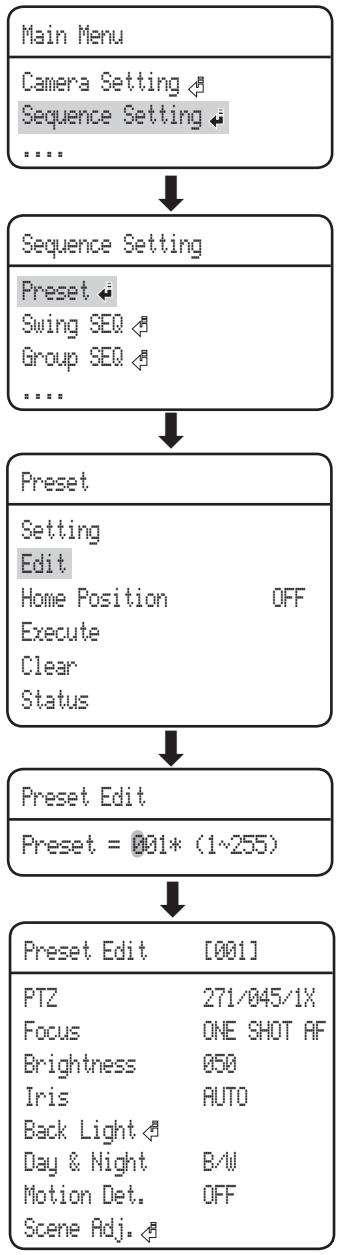
Selecting a preset number and pressing the Enter key redirects the menu to the screen shown below.

Using the joystick, adjust the location of the Pan and Tilt functions and then set the Zoom and Focus command.

In Preset Settings, the Zoom and Focus command is controllable only by the Zoom command. To switch between Zoom and Focus, use the Preset 1 and 2 commands as shown below.

10.2 Preset Edit

▶ Main Menu/Sequence Setting/Preset/Edit

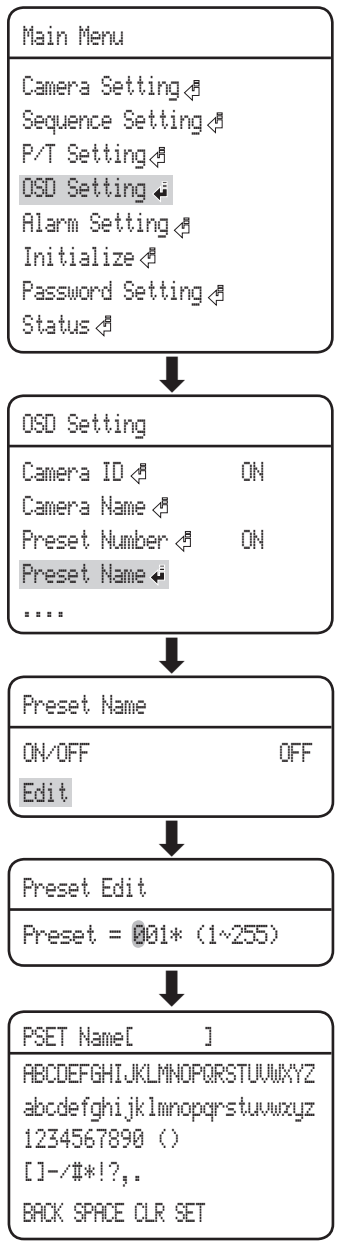


You can edit the 13 preset items such as Pan/Tilt location, Zoom and Focus, which are selected among camera functions.

- **PTZ :**
  Recalls saved locations using the Preset Settings command.
- **Focus Mode :**
  Refer to the section entitled Setting Up Your Camera.
- **Brightness :**
  Refer to the section entitled Setting Up Your Camera.
- **Iris :**
  Refer to the section entitled Setting Up Your Camera.
- **Backlight :**
  Refer to the section entitled Setting Up Your Camera.
- **Day/Night :**
  Refer to the section entitled Setting Up Your Camera.
- **Motion Det. :**
  Commands the camera to perform Motion Detection after it arrives at a selected preset location.
- **Scene Adj :**
  Enables setting the Shutter, AGC, SSNR, SSDR, Sens-Up, White Balance, and for more information about interface terminology, please refer to the section entitled Setting Up Your Camera.

10.3 Preset Name Setting

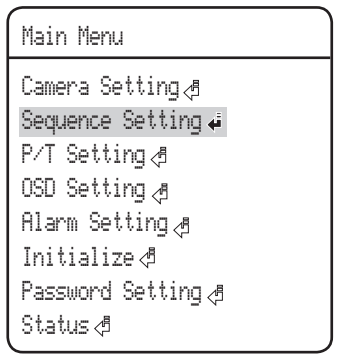
▶ Main Menu/OSD Setting/Preset Name/Edit



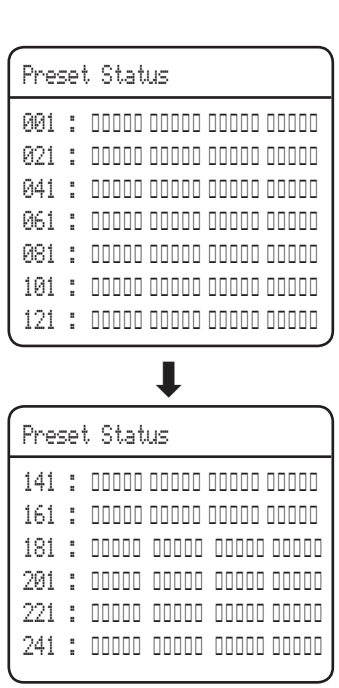
Using this function, you can add names to preset locations. up to 12 characters.
Once a name is entered, use the joystick and the Enter key to perform the Set command and save the name.

10.4 Preset Execution/Deletion/Memory Check

▶ Main Menu/Sequence Setting/Preset

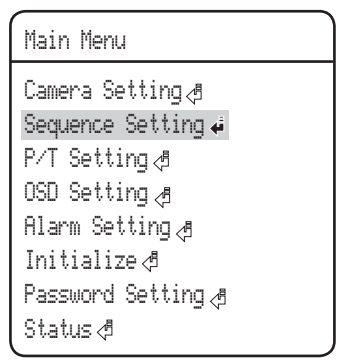


- **Home Position :**
  Sets one of the currently configured preset positions as the home position.
- **Execute :**
  Recalls a saved preset location.
- **Clear :**
  Deletes the selected preset location.
- **Status :**
  Opens a map of saved preset locations.
  An area saved as a preset location is displayed with the '☑' icon.



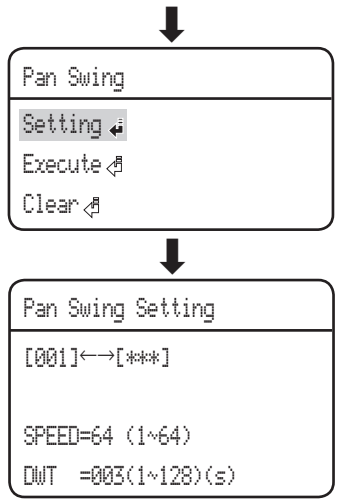
11. Swing SEQ

▶ Main Menu/Sequence Setting/Swing SEQ



The Swing function commands the camera to move between 2 selected locations, monitoring the route.

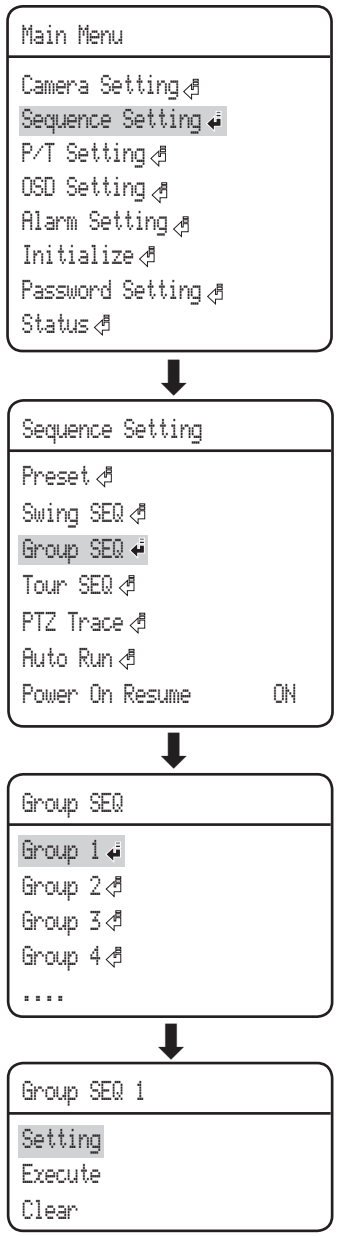
- **Pan Swing :**
  Activates the Pan function for the Swing operation.
- **Tilt Swing :**
  Activates the Tilt function for the Swing operation.
- **P&T Swing :**
  Activates both the Pan and Tilt functions for the Swing operation.
- **Swing Settings/Execute/Clear :**
  - Settings : Each of the Swing menus have sub menus with the settings.



Select 2 preset locations by using the joystick.
Speed indicates the camera's movement speed. DWT indicates the camera's duration of stay at a preset location.
- Execute: Executes the Swing operation.
- Clear: Deletes data in the Swing memory.

12. Group SEQ

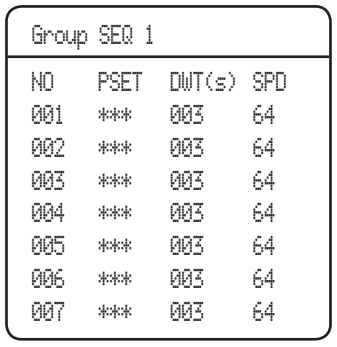
▶ Main Menu/Sequence Setting/Group SEQ



Selecting Group SEQ recalls a group of multiple preset locations in a consecutive manner. A group can contain up to 255 preset locations.

Setting :

Using the joystick, enter desired preset numbers into the PSET section. DWT indicates the camera's duration of stay at a preset location. SPD shows the camera's movement speed by 64 different levels.



Execute :

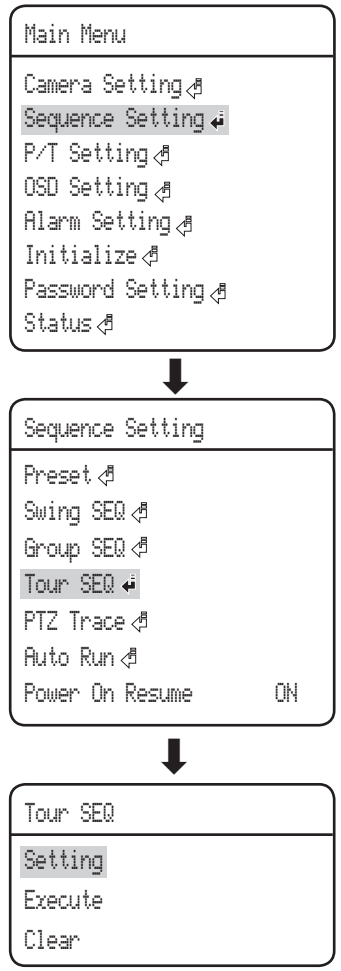
Executes the group operation.

Clear :

Deletes the selected group.

13. Tour SEQ

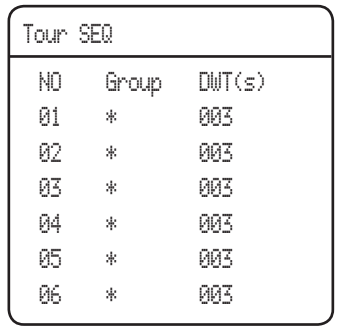
▶ Main Menu/Sequence Setting/Tour SEQ



Selecting Tour SEQ recalls groups of preset locations in a consecutive manner. Up to 6 groups can be listed for this function.

Settings :

Selecting the Settings menu brings up the following screen. Using the joystick, you can enter desired group numbers to the Group section. DWT indicates the camera's standby time before a new group is recalled.



Execute :

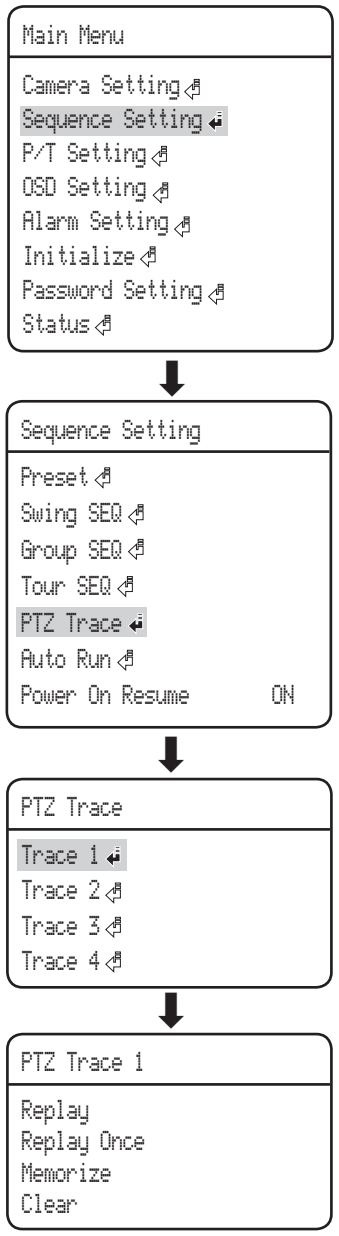
Executes the group operation.

Clear :

Deletes the selected group.

14. PTZ Trace

▶ Main Menu/Sequence Setting/PTZ Trace



Maximum 4 patterns of the manual operation paths (for Pan, Tilt, Zoom and Focus) are memorized and replayed.

- **Replay :**
  Replays a route saved by the Trace function. Use the Stop button to stop the replay.
- **Replay Once :**
  Replays a saved Trace route once.
- **Memorize :**
  Up to 120 seconds of a memory can be saved. The memory duration varies depending on the difficulty level of the PTZ Trace action. As a trace is saved, the remaining capacity of the memory card is displayed. When the memory card is full, it turns off with a message, "Mem. Left: 000%", on the screen.

* Use the OSD On button to pause while saving a trace. (When using the SCC-3100A/SCC-1000 controller)

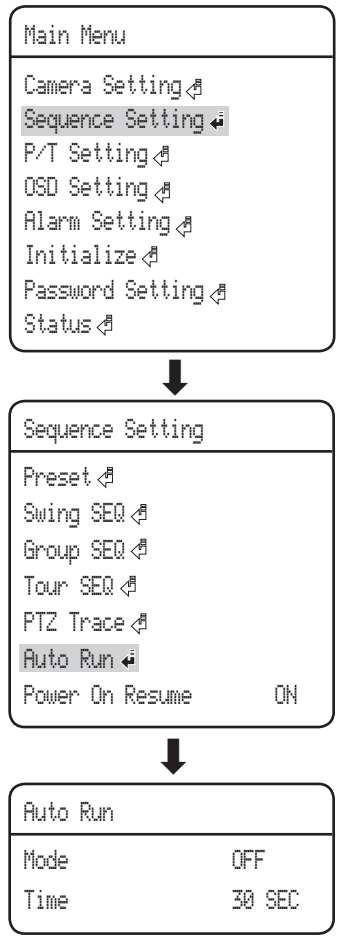
* When Using Different Protocols

Protocol	Product	Memorize Pause
PELCO-D/P	KBD300A	Ack, Iris Open
SEC	SCC-5000	OSD On, Iris Open
PANASONIC	WV-CU161C	OSD ON
VICON	V1300X-DVC	Iris Open
HONEYWELL	HTX-3000	Iris Open
AD	.	OSD On, Iris Open
GE	KTD-405	Iris Open
BOSCH	.	Iris Open

- **Clear :**
  Deletes a saved Trace route.

15. Auto Run

▶ Main Menu/Sequence Setting/Auto Run

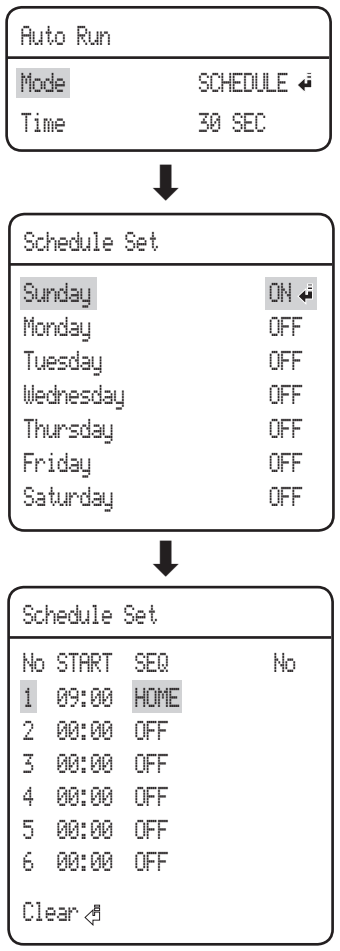


If there is no controller operation by the user for a certain time, the sequence operation designated by the user will be executed.

- **Mode :**
  - Home : Auto run Home Position (Refet to the Preset Menu.)
  - Preset : Auto run a selected preset number.
  - Swing : Auto run a selected Swing mode.
  - Group : Auto run a selected Group mode.
  - Tour : Auto run a selected Tour mode.
  - Trace : Auto run a selected trace mode.
  - A.Pan : Auto run a 360-degree pan. To activate the panning command, you need to set up the camera's tilt angle and auto pan speed manually.
- **Schedule :** Schedule a sequencing action by day and time. Refer to the next page.
- **Time :**
  Enables setting up an Auto Run duration. (The duration can be 5~60 seconds, or 1~60 minutes.)

16. Schedule

Schedule enables you to schedule a sequencing action by day and time.



Select Day :

At Auto Run, select SCHEDULE to set up each day of the week, as shown on the side picture. Select a day, change to ON, and then press Enter.

Select Time :

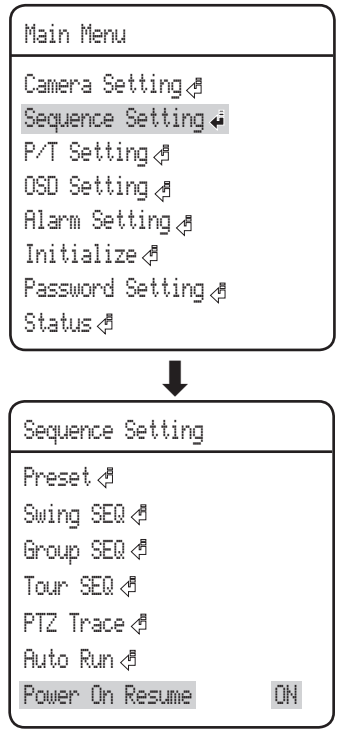
When turning ON a day, a timetable appears as shown on the side picture. (Up to 6 timelines can be selected for a day.) Select the beginning time and sequencing action to schedule the action.

Notes

- Auto mode is disabled when AGC is turned OFF. This function is only available when Color or B/W mode is selected. The camera time must be setup properly prior to using this option. If the camera does not perform a scheduled sequencing action, please reconfigure the camera time under OSD Setting > Others > Clock Setting (Refer to Page 71).

17. Power On Resume and MD Dwell Time

▶ Main Menu/Sequence Setting



Power On Resume :

This is useful when the power is disconnected and reconnected due to power failures or other power interruptions.

If the camera was performing a sequence action prior to a power disconnection, the camera automatically resumes the action when the power is reconnected.

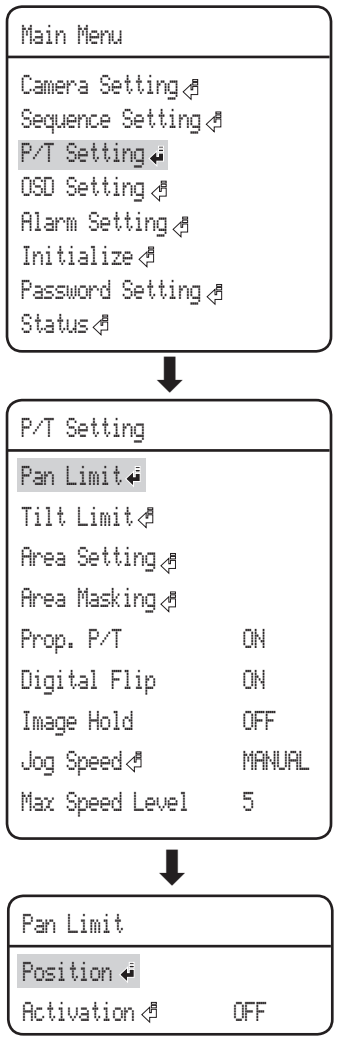
Notes

- 'Power On Resume' cannot resume a sequence action if the camera's internal battery is completely discharged after the camera was left without power supply for a long time. (The data of the sequence action, however, remains safe even if the internal battery is completely discharged.)

P/T Setting

18. Pan Limit

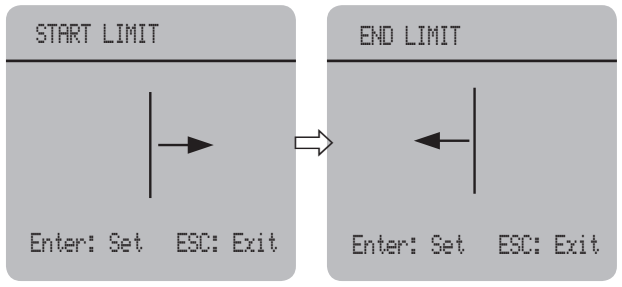
▶ Main Menu/P/T Setting/Pan Limit



The moving ranges in the Pan directions can be limited.

Position :

Selecting the Position menu brings up the following screen if it is for the Pan Limit setting. Move the joystick left and right to select a movement range from the starting point to the end.



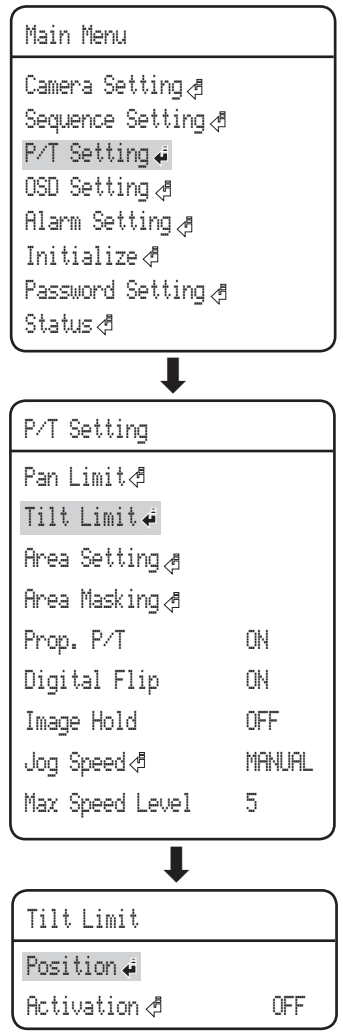
The following picture shows the Tilt Limit setting. Move the joystick left and right to select a movement range from the starting point to the end.

ON/OFF :

Cancels or activates the Pan/Tilt Limit functions.

19. Tilt Limit

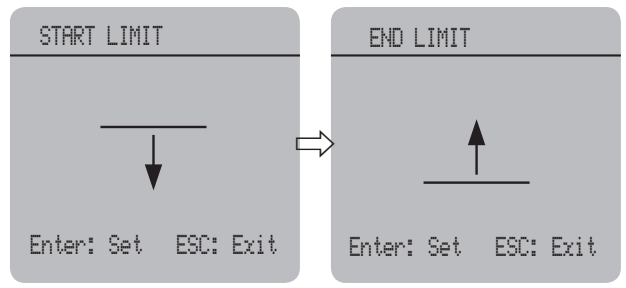
▶ Main Menu/P/T Setting/Pan/Limit



These settings limit the movement range of the Tilt operation.

Position :

Selecting the Position menu brings up the following screen if it is for the Tilt Limit setting. Move the joystick left and right to select a movement range from the starting point to the end.

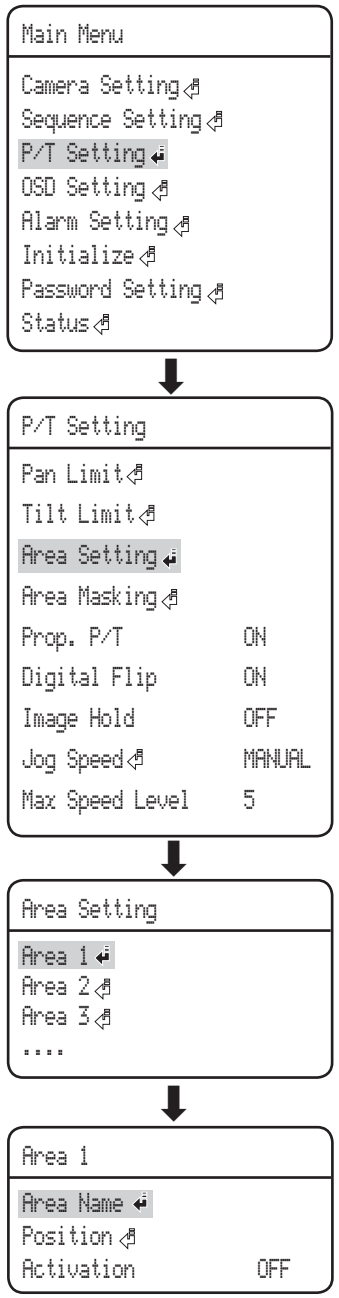


ON/OFF :

Enables or disables Tilt Limit.

20. Area Setting

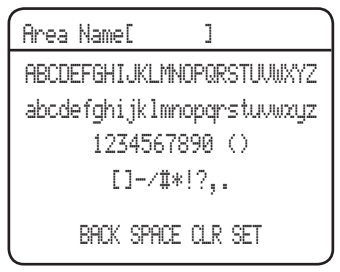
▶ Main Menu/P/T Setting/Area Setting



The Area Setting menu enables selecting certain locations in the course of the Pan and Tilt operation, and then display the areas with the OSD (On Screen Display) texts when the camera passes through them. Up to 8 areas can be selected.

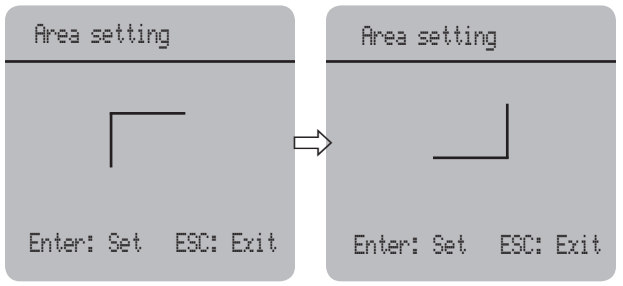
Area Name :

You can add names to selected areas. Names can be up to 12 characters and can be entered via the joystick and the Enter key. Once a name is entered, use the joystick and the Enter key to perform the Set command and save the name.



Position :

As shown in the picture below, move the joystick to select the upper left corner and lower right corner of an area.

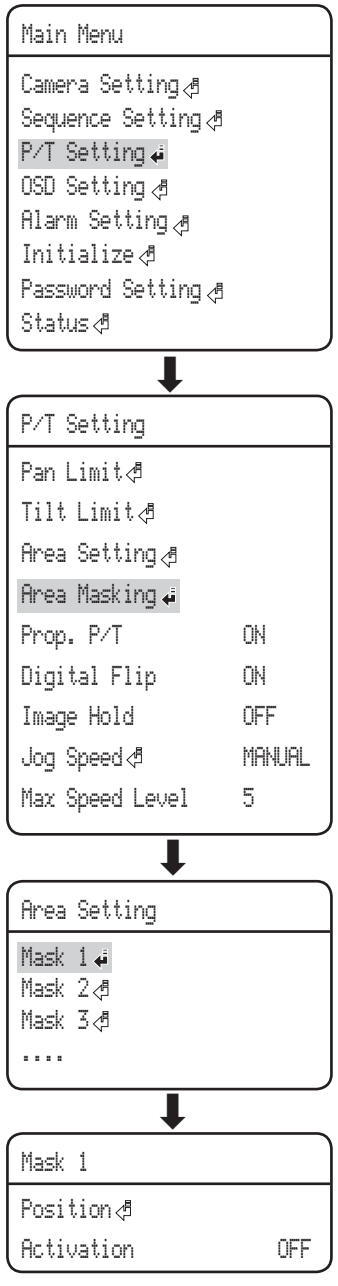


On/Off :

Cancels or activates the display function of selected areas.

21. Area Masking

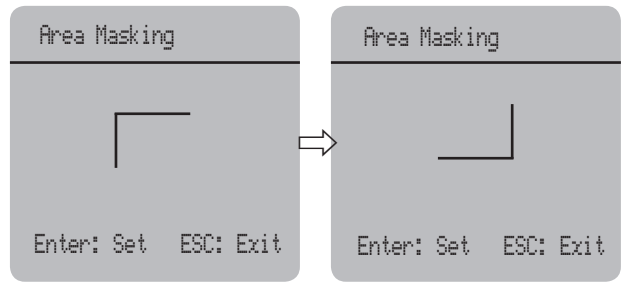
▶ Main Menu/P/T Setting/Area Masking



If a monitoring location includes a highly private area, the area can be selectively excluded from monitoring.

Position :

As shown in the picture below, move the joystick to select the upper left corner and lower right corner of an area.

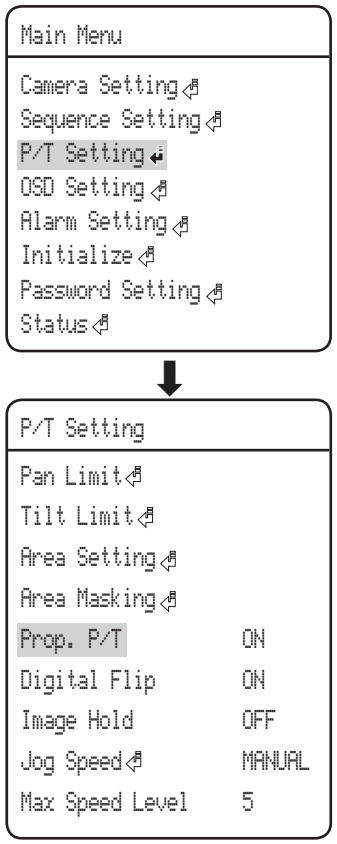


On/Off :

Cancels or activates the Area Masking function.

22. Prop. P/T

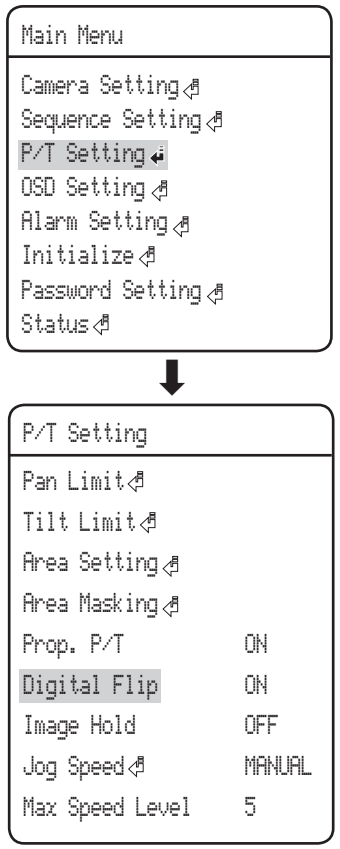
▶ Main Menu/P/T Setting/Prop. P&T



This commands the camera to change the Pan and Tilt speed automatically according to the current zoom ratio. Moving the joystick clockwise (Tele) slows down and counterclockwise (Wide) accelerates the Pan and Tilt speed, allowing detailed adjustments.
Turning this "Off" executes the function the optical 1x zoom speed regardless of how far the lens is zoomed in.

23. Digital Flip

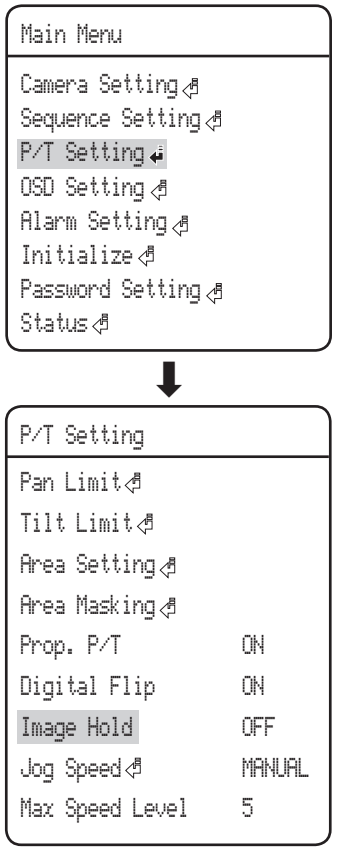
▶ Main Menu/P/T Setting/Digital Flip



Digital Flip is useful to monitor a moving object or a person passing directly under the camera.
When an object or a person passes directly under the camera, the camera tilt monitor follows the object or person over 100 degrees to the other side of the tilt area without panning. The screen inversion occurs at 100 degrees or higher and is digitally adjusted.

24. Image Hold

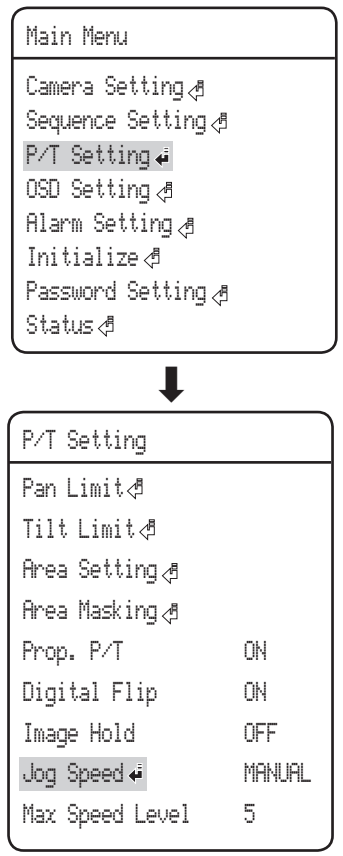
▶ Main Menu/P/T Setting/Image Hold



When the camera is moving between presets locations, this function freezes the cameras image until the camera reached the next location. This is useful to help the screen observer keep sharp eyes and to monitor multiple locations within a network.

25. Jog Speed

▶ Main Menu/P/T Setting/Jog Speed

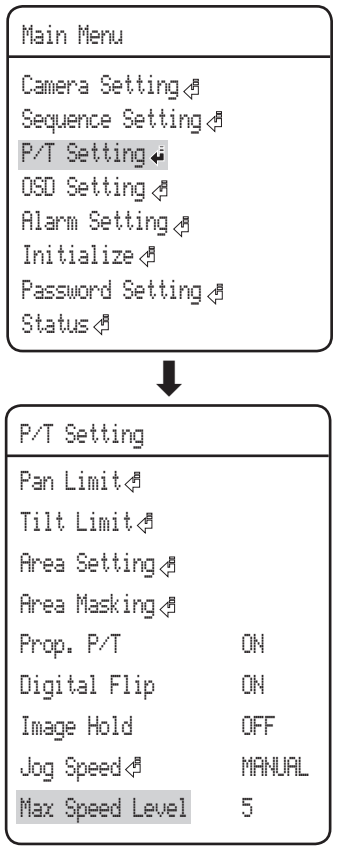


If the speed of your controller or DVR's Pant/Tilt command protocol is fixed and causes slow panning and tilting, you can use Manual mode.

- MANUAL : The angle of the controller handle determines the speed of Pan and Tilt; the more you tilt the controller, the faster the camera spins.
- 10~60 : Maintains speed regardless of the angle of the controller handle.

26. Max Speed Level

▶ Main Menu/P/T Setting/Max Speed Level



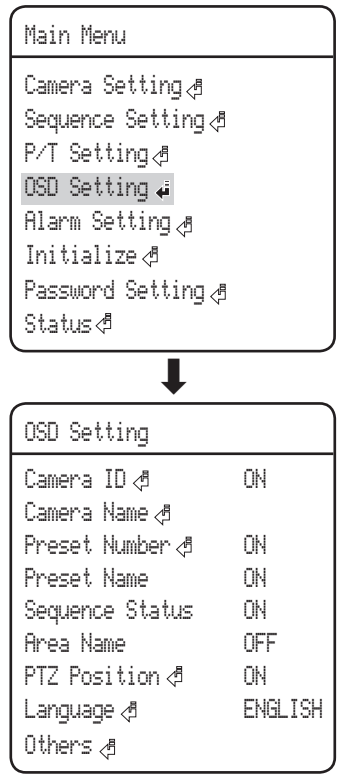
Adjusts the maximum speed of Pan and Tilt while performing the Preset and Sequencing actions.

- Pan and Tilt operations can be set up to 650°/ sec.

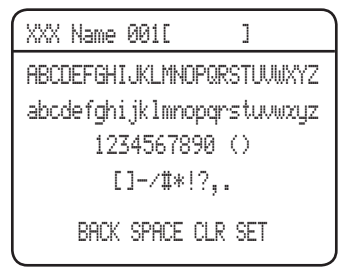
OSD Setting

27. OSD Setting

▶ Main Menu/OSD Setting



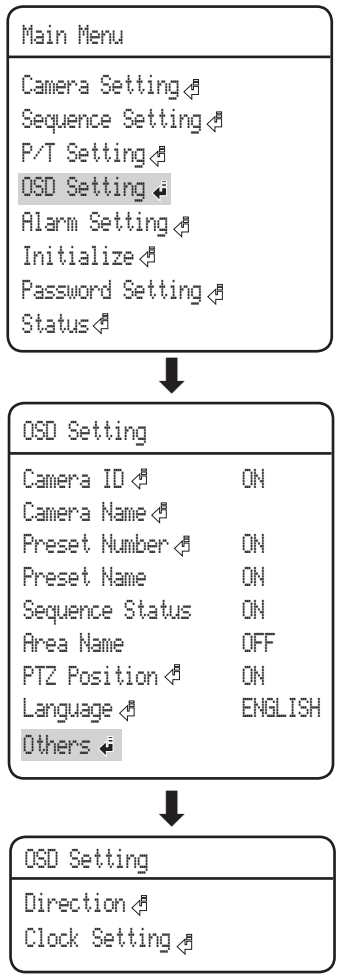
- **Camera ID :**
  Displays or hides Camera ID in the upper left of the screen.
- **Camera Name :**
  Add a name to the camera. (First check the Note.)
- **Preset Number :**
  Displays or hides Preset Numbers on the screen.
- **Preset Name :**
  Add names to preset locations. (First check the Note.)
- **Sequence Status :**
  Displays or hides the status of a sequence action that is in progress.
- **Area Name :**
  Displays or hides the Area Name for the Area Settings on the screen.
- **PTZ Position :**
  Displays or hides the status of the Pan, Tilt, and Zoom operation that is in progress.
- **Language :**
  Enables changing the system language. This camera supports English, Chinese, French, German, Spanish, Portuguese, Korean and Italian.



✻ When selecting the Camera Name and Preset Name, the screen displays the Left keypad. Names can be up to 12 characters and can be entered via the joystick and the Enter key. Once a name is entered, use the joystick and the Enter key to perform the Set command and save the name.

28. OSD Setting(Others)

▶ Main Menu/OSD Setting/Others



OSD Setting is to set up the OSD (On Screen Display) functions.

Direction : Indicates the current angle of the camera: East, West, South, North, Southeast, Southwest, Northeast, or Northwest.

- Setting North
  Set up a North direction for the camera.

Time Setup : Customize the camera clock; you can schedule sequence actions to perform automatically.

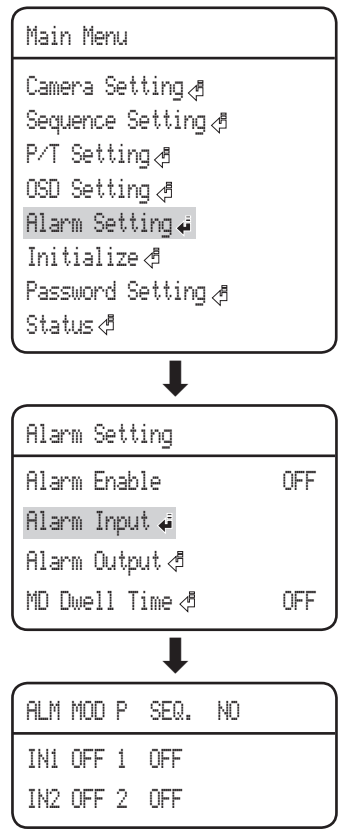
- Display
  Shows or hides the clock from the screen.
- Date Format
  Changes the display format of the camera date: DD/MM/YYYY or MM/DD/YYYY.
- Set Date
  Enter a date.
- Time Format
  Changes the display format of the camera time: 24 or 12 hours.
- Time Setup
  Enter a time.

Alarm Setting

29. Alarm Setting

29.1. Setting Up Alarm Input

▶ Main Menu/Alarm Setting/Alarm Input



Alarm Enable :

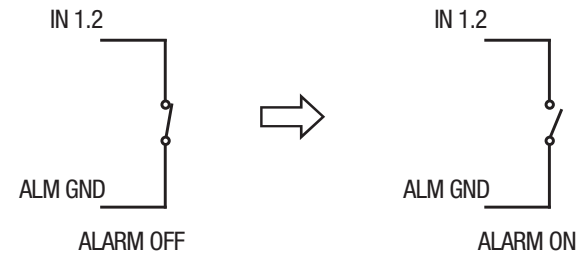
- On/Off : Enables or disables the Alarm function.

MOD :

Enables selecting an Alarm Input method.

- NO (Normally Open)

- NC (Normally Closed)



Notes

- As shown in the picture above, the Alarm Input must be entered with the Open or Closed switch signals. Supplying power without entering the signals may damage the product.

P (Priority) :

Set the priority of Alarm Inputs. If more than one alarm is simultaneously activated, the alarm with the highest priority activates before the others. Once the alarm is canceled, the next highest priority alarm activates.

SEQ :

Enables setting up a sequence action for the camera in response to an alarm. Available sequence actions are Home, Preset, Swing, Group, Tour, Trace and A.Pan.

※ For the Auto Pan settings, the first number under the Number menu indicates the speed while the second is the Tilt angle. (Refer below.)

ALM	MOD	P	SEQ	NO
Input 1	NO	1	Auto Pan	20/20
Input 2	NC	2	Auto Pan	20/20

Tilt Angle
Speed

MD Dwell Time :

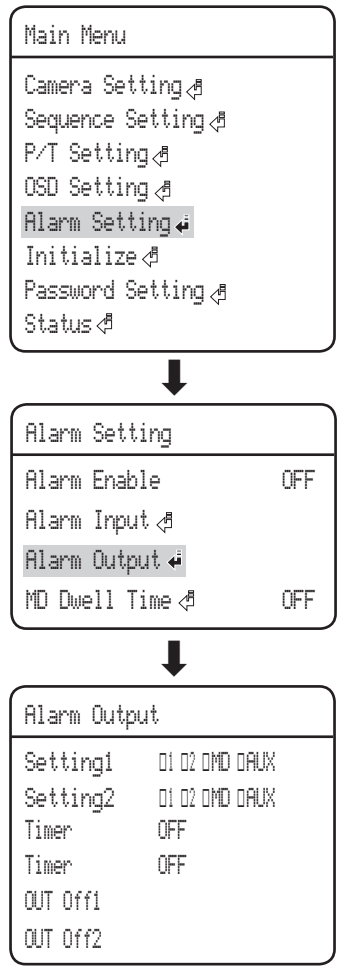
When Motion Detection under the Preset Edit menu is selected, MD Dwell Time performs the Tour or Group function.

While the camera is performing a sequence action, if motion is detected from a selected preset location, the camera pauses the sequence action operation and starts monitoring the location instead for a duration that is set under the MD Dwell Time menu.

If the motion is no longer detectable or the duration expires, the camera aborts the monitoring operation and then resumes the sequence action.

29.2. Alarm Output

▶ Main Menu/Alarm Setting/Alarm Output



Setting 1,2 :

Enables selecting an Alarm Output method.

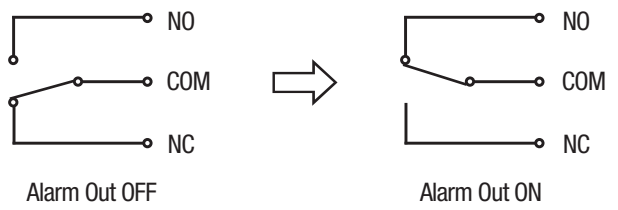
- 1, 2, Motion, and Support Device indicate alarm input ports, Motion Detection, and support device input. A total of 4 alarms, Motion Detection, and support devices can be set up to output alarms. 1 alarm output port can be used for more than 2 alarm inputs and Motion Detection.

Timer 1,2 :

Enables selecting an Alarm Output method.

- On : Retains an alarm output for a set duration from a minimum of 1 second to a maximum of 60 minutes upon the alarm occurrence.
- Momentary : Retains an alarm output only until the alarm is canceled.

✻ The Alarm Output is equipped with a relay circuit. The operation of the alarm output port is as shown in the diagram below.



Alarm Out OFF　　Alarm Out ON

Notes

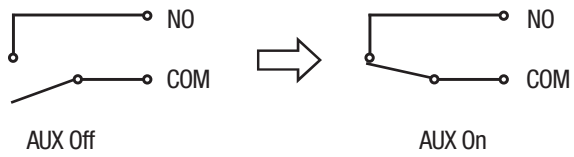
- Connecting the power connector and GND incorrectly to the NC/NO and COM ports may cause a short circuit and fire, damaging the camera.
- The maximum power capacity of the built-in relay is 30VDC/2A, 125VAC/0.5A, and 250VAC/0.25A. Operating the camera beyond the capacity may decrease the camera's lifespan and damage it.

Functional Description

AUX Output menu is to operate the camera's peripheral devices such as lamps and sirens through the controller and switches as well as through network communications.

OUT Off 1,2 :

- When an alarm event occurs, the output force can be terminated.



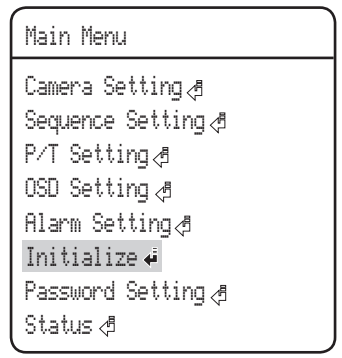
Notes

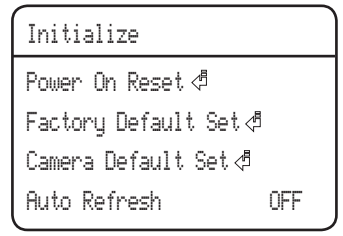
- Connecting the power connector and GND incorrectly to the Aux terminal's NO and COM ports may cause a short circuit and fire, damaging the camera.
- The maximum power capacity of the built-in relay is 30VDC/2A, 125VAC/0.5A, and 250VAC/0.25A. Operating the camera beyond the capacity may decrease the camera's lifespan and damage it.

Initialize

30. Initialization Menu

▶ Main Menu/Initialize





Power On Reset :

Restarts the camera.

Factory Default :

Enables resetting the camera to its factory default settings. When the mode is selected, all custom data such as preset locations is deleted from the camera.

Use this function if it is necessary to reset the settings of the camera.

Camera Default :

Resets the camera zoom module to the Factory Default mode; use if you want to reset all camera settings including Exposure and Backlight.

Auto Refresh :

Enables optimizing the status of the camera's built-in electric circuits and components on a regular basis. (A regular operation can be scheduled.)

This mode can be used to maintain and repair the current settings of the camera when anomalous operations occur: e.g. The camera happened to directly face a light source, or the settings have been canceled after the camera repeatedly rotated in all four directions for a long time to monitor a specific location.

The default setting is Off.

- Off, 1~7 Days : Selecting Off disables Auto Refresh and selecting 1~7 Days automatically executes it after 1~7 days has passed.

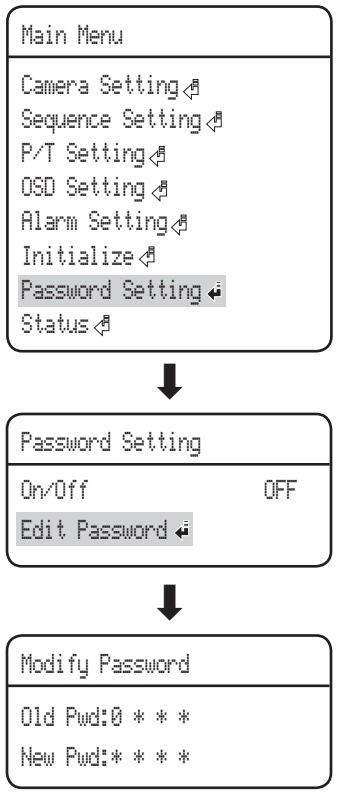
✻ Auto Refresh takes approximately 10 seconds to finish. If Auto Refresh activates in the middle of a sequence action, the camera pauses the sequence action and performs an Auto Refresh, then resumes the sequence action once the refresh is complete.

Functional Description

Password setting

31. Password setting

▶ Main Menu/Password setting



The Password feature enables you to configure a password for rebooting the camera and accessing the OSD and preventing unauthorized modification of existing camera settings.

- **ON/OFF :**
  Enables or disables Password protection.
- **Edit Password :**
  - Change the password; enter the current password and then a new one, consisting of 4 hexadecimal characters (0~F).
    * The default password is "0000".

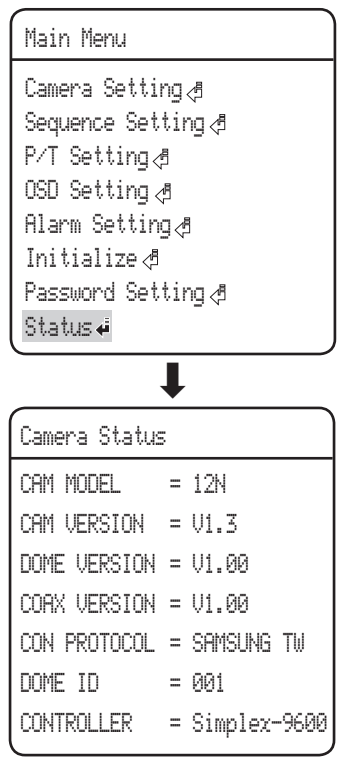
Notes

- Upon using "Factory Default Set" at "Main Menu > Initialize," the password is reset to the default, "0000".

Status

32. Status

▶ Main Menu/Status



Displays the settings and version of the dome camera.

- **Cam Model :**
  Indicates the model name of the camera.
- **Cam Version :**
  Indicates the software version of the camera.
- **Dome Version :**
  Indicates the version of the camera control board.
- **COAX VERSION :**
  Indicates the software version of the Coax communication.
- **CON Protocol :**
  Indicates the status of the current protocol.
- **Dome ID :**
  Camera ID
- **Controller :**
  Indicates the settings of the current communications mode.

Troubleshooting

Problem	Cause and Solution	PAGE
Controller does not work.	▶ Check if the camera and peripheral devices are properly connected.	26
	▶ Verify the setups of ID, protocol, and baud rates.	17~24
No picture is displayed on monitor.	▶ Check if power cable is securely connected to the camera and the monitor. Check if the video cable is properly connected. Consult the operation manual of the system controller connected to the camera.	13~15
	▶ Check if the iris of the lens is closed. Adjust the menu for the iris of the lens.	42
	▶ Check the camera's fixed shutter speed. Adjust the camera's shutter menu.	42
The picture is too dark/ bright.	▶ Check the camera's Brightness menu. Adjust the camera's Brightness menu.	42
The monitor displays a white image.	▶ Check if the iris of the lens is open. Adjust the menu for the iris of the lens.	42
Picture is out of focus.	▶ Check if the dome cover or the camera lens is dirty or smudged. If it is, clean the dirt off.	-
	▶ Verify the distance between the camera and the subject, as well as the subject's surroundings. Camera may have difficulty focusing on a subject against a white background.	-
	▶ If Auto Focusing is having difficulty focusing on a particular subject, set Focus Mode to Manual and adjust the focus by yourself.	39~40
	▶ Use the camera's reset menu to restore the camera settings in order to default.	77
	▶ Adjust Sharpness level.	50

Digital noise appears in picture.	▶ Check if the video cable is properly connected.	-
	▶ Make sure that the power cable and video cable do not exceed the recommended maximum lengths.	25
	▶ Adjust Sharpness level.	50
Picture's colors are not good.	▶ Check the White Balance.	41
	▶ Adjust Color Menu in Image Adj.	50
The picture is flickering.	▶ Check if the dome cover or the camera lens is dirty or smudged. If it is, clean the dirt off.	-
	▶ Check if the camera is pointing directly at a fluorescent light or sunlight. If so, change the camera's direction to remove the flickering.	-
Afterimages appear in picture.	▶ Check Sens-Up settings.	42
Camera switches between color and B&W modes frequently.	▶ Adjust Duration and Dwell Time in Day & Night menu.	49
A circular object appears on screen when the camera is pointing straight down.	▶ You are seeing a pinpoint-like injection artifact on the dome cover. The camera is functioning normally.	-
Pan, tilt, zoom, and/or focus do not work.	▶ Check if power cable is securely connected to the camera and the monitor. Check if the video cable is properly connected. Consult the operation manual of the system controller connected to the camera.	13~15
	▶ Check if Pan Limit and/or Tilt Limit are set. If so, remove the limit(s).	62~63
	▶ A motor or the lens may be overheated. If so, contact your service personnel or system provider for assistance.	-

Troubleshooting

The camera's position differs from the position defined in a preset.	▶ This phenomenon may happen, since the motors have a margin error of ±0.1˚.	-
Sequence configuration of the camera does not work.	▶ Check if Preset or another operation mode has been set.	51~54
	▶ Check the Auto Refresh settings.	77
The upper side of the picture is dark when the camera is on the horizontal reference point.	▶ You are seeing the camera's internal cover. The camera is functioning normally.	-
Camera suddenly turns on or moves to a preset position by itself.	▶ Check the Auto Run settings. Auto Run puts a camera through a predefined action sequence if the user does not use the Controller to operate the camera for a certain period of time.	59
• The Power cord's coating has been damaged. • The power cord is hot to touch when the product is in operation. • The power cord gets hot after being folded or pulled on.	Continuing to use the product when its power cord is damaged constitutes an electrical and fire hazard. The power plug must be removed from the outlet immediately, and a qualified service personnel or your system provider should be contacted for assistance.	-

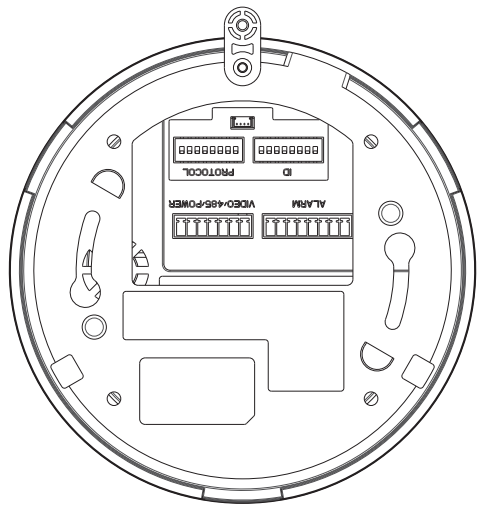
Product Specification

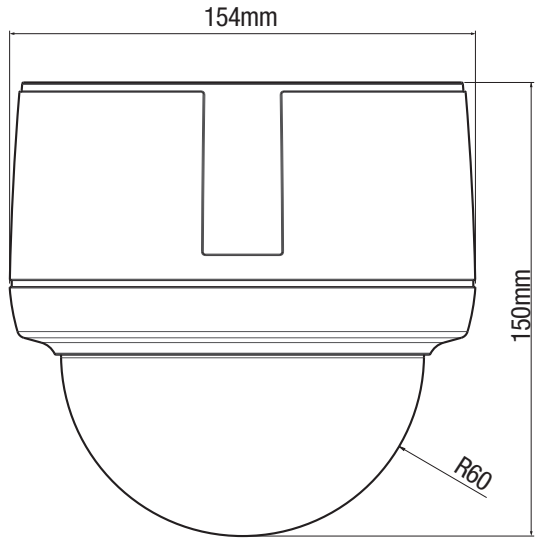
	SCP-2120
Imaging Device	1/4 inch, Super HAD color CCD
TV Standard	NTSC/PAL
Total Pixels	NTSC : 811(H) × 508(V) / PAL: 795(H) × 596(V)
Effective Pixels	NTSC : 768(H) × 494(V) / PAL: 752(H) × 582(V)
Scanning System	2:1 Interlace
Synchronization	Internal / External (AC Line Lock)
Horizontal Scan Rate	NTSC : 15.734 KHz / PAL:15.625 KHz
Vertical Scan Rate	NTSC : 59.94 Hz / PAL:50Hz
Horizontal Resolution	600 TV Line(Color) / 700 TV Line(B/W)
Min. Illumination	Color : 0.2Lux(50IRE@F1.6), 0.002Lux(SENS-UP, x128) B/W : 0.004Lux(50IRE@F1.6), 0.00003Lux(SENS-UP, x128)
S/N (Y Signal)	52 dB
Video Output	CVBS :1.0Vp-p/75Ω
Zoom Ratio	12X (Optical), 16X (Digital)
Focal Length	3.94~46.05mm (F1.67~1.88)
Min. Object Distance	1.0m
Angular Field of view	25.77°(Wide) ~ 2.25°(Tele) 19.64°(Wide) to 1.69°(Tele)
Focus	AUTO / MANUAL / ONE-SHOT
Zoom Speed	1.9sec
IRIS	AUTO / MANUAL
Lens Initialization	Built-In
Auto Tracking	Built-In
Horizontal Rotation Angle	360° Endless
Horizontal Rotation Speed	Manual : 0.05~120°/sec (Turbo:200°/sec), Preset : 650°/sec
Vertical Rotation Angle	-5° ~ 185°
Vertical Rotation Speed	Manual : 0.05~120°/sec, Preset : 650°/sec
Preset Position	255
Preset Accuracy	±0.1°
Camera ID	255
Day & Night	AUTO / COLOR / BW
Backlight	BLC / HLC / OFF
Motion Detection	ON / OFF
Privacy Mask	ON / OFF (8 Areas)
SSNR	LOW / MEDIUM / HIGH / OFF
Sens-up	Auto / Off (Selectable limit X2~ 512X)
Gain Control	Auto / Off
White Balance	ATW / ATW(IN) / ATW(OUT) / AWC / MANUAL

Product Specification

Electronic Shutter	AUTO(NTSC:1/60~120,000sec, PAL:1/50~120,000sec) / MANUAL / A.FLK
Serial Com.	RS485, Coaxial Communication
Protocol	STW, Pelco-D, Pelco-P, Pelco Coaxitron, Panasonic, Honeywell, AD, Vicon, SEC, BOSCH, GE
Alarm	2 In, 2 Out
Digtal Flip	ON/OFF
Operating Temperature/Humidity	-10°C to +50°C / 20% to 80% RH
Storage Temperature/ Humidity	-20°C to +60°C / 20% to 95% RH
Input Voltage	AC24V ± 10%
Power Consumption	Max. 12W
External Dimensions (Ø×D)	Ø154×150mm
Weight	Approx. 1 kg

Dimension





DECLARATION OF CONFORMITY

Application of Council Directive(s)	2004/108/EC
Manufacturer's Name	SAMSUNG TECHWIN CO., LTD
Manufacturer's Address	SAMSUNG TECHWIN CO., LTD
	42, SUNGJU-DONG CHANGWON-CITY,
	KYUNGNAM, KOREA, 641-716
European Representative Name	
European Representative Address	
Equipment Type/Environment	Speed Dome Camera
Model Name	SCP-2120
Beginning Serial NO.	C3Z4
Year of Manufacture	2009.1.27
Conformance to	EN 55022 : 2006
	EN 50130-4 : 2003

We, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

Manufacturer	SAMSUNG TECHWIN CO., LTD	Legal Representative in Europe
Signature	BJ Gu	Signature
Full Name	BONJENG GU	Full Name
Position	QUALITY CONTROL MANAGER	Position
Place	CHANGWON, KOREA	Place
Date	2009.1.27	Date

MEMO

SAMSUNG TECHWIN

SALES NETWORK

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